

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PADL/40303	<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">FOR FURTHER ACTION</div> <div style="font-size: small;">see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</div> </div>	
International application No. PCT/GB 99/ 03010	International filing date (day/month/year) 10/09/1999	(Earliest) Priority Date (day/month/year) 27/01/1999
Applicant BRITISH BROADCASTING CORPORATION et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 99/03010

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F17/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>"1ST REPORT OF EBU / SMPTE TASK FORCE FOR HARMONIZED STANDARDS FOR THE EXCHANGE OF TELEVISION PROGRAM MATERIAL AS BIT STREAMS"</p> <p>EBU REVIEW- TECHNICAL, BE, EUROPEAN BROADCASTING UNION. BRUSSELS, no. 272, 21 June 1997 (1997-06-21), page 1-73 XP000720137</p> <p>ISSN: 0251-0936</p> <p>page 14, line 1 -page 22, line 9 page 38, line 8 -page 38, line 19 page 48, line 1 -page 48, line 21 page 57</p> <p style="text-align: center;">--- -/--</p>	1-36

☒ Further documents are listed in the continuation of box C.

☐ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

13 January 2000

Date of mailing of the international search report

25/01/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Abbing, R

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MORGAN O: "Wrappers and Metadata Sub Group digital video standards" IEE COLLOQUIUM ON THE EBU-SMPTE TASK FORCE: BUILDING AN INFRASTRUCTURE FOR MANAGING COMPRESSED VIDEO SYSTEMS (REF. NO.1997/382), IEE COLLOQUIUM ON THE EBU-SMPTE TASK FORCE: BUILDING AN INFRASTRUCTURE FOR MANAGING COMPRESSED VIDEO SYSTEMS (REF.NO.1997, pages 5/1-7, XP002127283 1997, London, UK, IEE, UK the whole document ---	1-36
A	WILKIE, C.: "Multimedia Metadata - our 70 year experience" 2ND IEEE METADATA CONFERENCE, 'Online! 16 - 17 September 1997, XP002127284 Silver Spring, Maryland, USA Retrieved from the Internet: <URL:http://computer.org/proceedings/meta97/papers/cwilkie/cwilkie.htm> 'retrieved on 2000-01-11! the whole document -----	1-36

PATENT COOPERATION TREATY

✓
X
PADL
27.7.01
P
M

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Rule 71.1)

To:

LLOYD, P.
REDDIE & GROSE
16, Theobalds Road
London WC1X 8PL
GRANDE BRETAGNE

Date of mailing
(day/month/year) 12.04.2001

Applicant's or agent's file reference
PADL/jch/40303

IMPORTANT NOTIFICATION

International application No.
PCT/GB99/03010

International filing date (day/month/year)
10/09/1999

Priority date (day/month/year)
27/01/1999

Applicant
BRITISH BROADCASTING CORPORATION et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized officer

Schall, H

Tel. +49 89 2399-2647



PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PADL/jch/40303	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB99/03010	International filing date (day/month/year) 10/09/1999	Priority date (day/month/year) 27/01/1999
International Patent Classification (IPC) or national classification and IPC G06F17/30		
Applicant BRITISH BROADCASTING CORPORATION et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 21/08/2000	Date of completion of this report 12.04.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Jaedicke, M Telephone No. +49 89 2399 2357



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/03010

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-28 as originally filed

Claims, No.:

1-36 as originally filed

Drawings, sheets:

1/77-77/77 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/03010

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims
	No:	Claims 1, 18
Inventive step (IS)	Yes:	Claims
	No:	Claims 2-17, 19-36
Industrial applicability (IA)	Yes:	Claims 1-36
	No:	Claims

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

- D1: '1ST REPORT OF EBU / SMPTE TASK FORCE FOR HARMONIZED STANDARDS FOR THE EXCHANGE OF TELEVISION PROGRAM MATERIAL AS BIT STREAMS' EBU REVIEW- TECHNICAL, BE, EUROPEAN BROADCASTING UNION. BRUSSELS, no. 272, 21 June 1997 (1997-06-21), page 1-73, XP000720137, ISSN: 0251-0936.
- D2: DATE C. J.: 'AN INTRODUCTION TO DATABASE SYSTEMS', Vol. 1, Fifth Edition, here: Chapter 22 'Semantic Modelling', pages 579-589, 1990, ADDISON-WESLEY, USA.
- D3: MITSCHANG, B.: Datenbanksysteme (data base systems), slides to lecture given 1996/1997 at the Technische Universität München, Chapter 3: Informations- und Datenmodelle (Information and Data Models), pages 3-1 to 3-70, Munich, Germany.

The documents D2-D3 were not cited in the International Search Report.

2. The document D1 is regarded as being the closest prior art to the subject-matter of claim 1 and discloses (the references in parentheses applying to this document):

A method for defining a metadata structure relating to media materials, concepts and services (see D1, page 1, line 1 - page 2, fourth paragraph; page 15, Figure 2; page 16, subsection 2.2.3), the method comprising the steps of:

- * defining a plurality of storage entities at a plurality of levels for metadata relating to media materials, concepts, and services, the storage entities having a plurality of storage elements and being related with a media metadata subject grouping, and arranged in hierarchical and non-hierarchical relationships allowing an appropriate combination of elements as required (see D1, page 15, Figure 2: relationship between Content Element, Content Item and Content Package; subsection 2.2.1 on pages 15-

- 16; page 1, line 1 - page 2, fourth paragraph);
- * storing metadata relating to a given storage entity in one of a plurality of storage elements of the entity at that level, each storage element representing an attribute or characteristic of the entity subject or media material (see D1, subsection 2.2.1 on pages 15-16; page 38, section B.2);
 - * arranging media metadata entities and attributes relating directly to the media material, concepts and services in hierarchical and non-hierarchical entity level relationships allowing an appropriate combination of elements as required (see D1, page 16, sections 2.2.2 and 2.2.3 and page 15, Figure 2); and
 - * wherein for hierarchical entities, the storage elements of storage entities at a level apart from the lowest level, comprise the storage elements of the immediately lower storage level (see D1, page 16, sections 2.2.2 and 2.2.3 and page 15, Figure 2 and subsection 2.2.1).

Document D1 discloses all the features of the method of claim 1 of the present application. Hence, the method of claim 1 cannot be considered as being new in the sense of Article 33(2) PCT.

Moreover, it should be noted that the solution proposed by D1 solves the same problem (providing media metadata for information storage and exchange) with the same advantages (see description page 7, lines 10-19; page 13, lines 18-24: metadata related to a media item can be stored in a manner which minimises storage space through the use of relationships) as the method of claim 1 of the present application.

3. Independent claims 18, 35, and 36 relate to data structures for defining broadcast media metadata.
- 3.1 The features of the data structure of claim 18 correspond to those of the method of claim 1 which is known from D1 according to point 2 above. Since a skilled person implicitly knows that there are necessarily corresponding data structures when a method is implemented on a computer, the subject matter of claim 18 is considered to be not new (Article 33(2) PCT).

- 3.2 The argument presented under point 3.1 holds with regard to those features of claims 35 and 36 which correspond to features of the method of claim 1. The further features defined in claims 35 and 36 which do not correspond to features of the method of claim 1 relate to aspects such as business metadata identifying legal rights, legal jurisdiction of these rights, etc. Thus, it is evident that the contributions of claims 35 and 36 over D1 are related to the solution of business problems. Because no technical problem is solved these claims lack an inventive step in the sense of Article 33(3) PCT.
4. Dependent claims 2-17 and 19-34 are not inventive (Article 33(3) PCT), because the subject matter added by these claims is either known from document D1 or it does not have a technical effect, does not involve technical considerations and does not solve any technical problem. Hence, the added subject matter does not constitute a technical contribution to the state of the art in information systems.

The subject matter added by the dependent claims appears to relate to the application semantics (i.e. the underlying business problem) and/or to well-known concepts like organisation of entities in levels linked by hierarchical or non-hierarchical relationships. Such organizational concepts for semantic data modelling constitute common knowledge (see for example D2, Figure 22.3 and corresponding text on subtypes at pages 586-587; D3, slides 3-28 - 3-42; D1, page 21, last two lines).

It is emphasized that methods needed to perform semantic modelling of data are well known in the art. In fact, such methods are common general knowledge taught at universities in basic courses covering information systems (see D2 for an excerpt from a standard textbook and D3 for an excerpt from university teaching materials). Hence, semantic modelling of data, i.e. the definition of (meta)data structures according to given requirements that are determined from business needs, is a commonplace task. This semantic modelling of data is thus done without the exercise of inventive skills.

Re Item VII

Certain defects in the international application

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/03010

1. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
2. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1-D2 is not mentioned in the description, nor are these documents identified therein.
3. The description at page 14, lines 32-33, is redundant to page 14, lines 30-31.

Re Item VIII

Certain observations on the international application

- 1.1 The plurality of independent claims 1, 18, 35, 36 specifying partly overlapping features, sometimes using different definitions or terminology for what appear to be intended to be the same features, makes it unclear what the applicant considers to be the features which are necessary to define the invention for which protection is sought. Hence, the independent claims as a whole are unclear (Article 6 PCT).
- 1.2 It would not appear to be necessary to have more than one independent claim in any one category (see claims 18, 35, and 36).
Independent claims in different categories should claim corresponding features in corresponding terms (see claims 1 and 36, for example).

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference
(if desired) (12 characters maximum)

PADL/40303

Box No. I TITLE OF INVENTION
BROADCAST MEDIA METADATA STRUCTURE

Box No. II APPLICANT

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

BRITISH BROADCASTING CORPORATION
BROADCASTING HOUSE
LANGHAM PLACE
LONDON W1A 1AA
GB

☐ This person is also inventor.

Telephone No.

Facsimile No.

Teleprinter No.

State (that is, country) of nationality:
GB

State (that is, country) of residence:
GB

This person is applicant for the purposes of: ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

CHAN DAVID
140c, CROXTED ROAD
DULWICH, LONDON SE21 8NR
GB

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
GB

State (that is, country) of residence:
GB

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: ☒ agent ☐ common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

LLOYD, PATRICK ALEXANDER DESMOND
REDDIE & GROSE
16 THEOBALDS ROAD
LONDON WC1X 8PL
GB

Telephone No.

+44 171 242 0901

Facsimile No.

+44 171 242 3290

Teleprinter No.

25445

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
<i>If none of the following sub-boxes is used, this sheet should not be included in the request.</i>	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i> ORMROD TRACY-ANNE 4, FULLAMOR FARM BARNS CLIFTON, HAMPDEN, ABINGDON, OXON GB	This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i>
State <i>(that is, country)</i> of nationality: GB	State <i>(that is, country)</i> of residence: GB
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i> OWENS, CAROL JANET 35 MULGRAVE ROAD EALING, LONDON W5 1LF GB	This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i>
State <i>(that is, country)</i> of nationality: GB	State <i>(that is, country)</i> of residence: GB
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i> MCGREGOR DIANE MARIE FLAT 1, 105, VICTORIA ROAD LONDON NW6 6TD GB	This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i>
State <i>(that is, country)</i> of nationality: GB	State <i>(that is, country)</i> of residence: GB
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i> CURTIS WESLEY JONATHAN 36, ALVERSTONE AVENUE WIMBLEDON PARK LONDON SW19 8BE GB	This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i>
State <i>(that is, country)</i> of nationality: GB	State <i>(that is, country)</i> of residence: GB
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
<input checked="" type="checkbox"/> Further applicants and/or (further) inventors are indicated on another continuation sheet.	

Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

JORDAN SMITH JOHN
93 BEDFORD ROAD
WALTHAMSTOW
LONDON E17 4PU
GB

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
GB

State (that is, country) of residence:
GB

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

HAYNES ARTHUR BRIAN
50, HILLCREST ROAD
CAMBERLEY
SURREY GU15 1LG
GB

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:
GB

State (that is, country) of residence:
GB

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

- ☐ applicant only
☐ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

State (that is, country) of residence:

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

- ☐ applicant only
☐ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

State (that is, country) of residence:

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on another continuation sheet.

Box No.V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

Regional Patent

- ☒ AP ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SL Sierra Leone, SZ Swaziland, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☒ EA Eurasian Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ EP European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ OA OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- | | |
|--|--|
| <input checked="" type="checkbox"/> AE United Arab Emirates | <input checked="" type="checkbox"/> LR Liberia |
| <input checked="" type="checkbox"/> AL Albania | <input checked="" type="checkbox"/> LS Lesotho |
| <input checked="" type="checkbox"/> AM Armenia | <input checked="" type="checkbox"/> LT Lithuania |
| <input checked="" type="checkbox"/> AT Austria | <input checked="" type="checkbox"/> LU Luxembourg |
| <input checked="" type="checkbox"/> AU Australia | <input checked="" type="checkbox"/> LV Larvia |
| <input checked="" type="checkbox"/> AZ Azerbaijan | <input checked="" type="checkbox"/> MD Republic of Moldova |
| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina | <input checked="" type="checkbox"/> MG Madagascar |
| <input checked="" type="checkbox"/> BB Barbados | <input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia ... |
| <input checked="" type="checkbox"/> BG Bulgaria | <input checked="" type="checkbox"/> MN Mongolia |
| <input checked="" type="checkbox"/> BR Brazil | <input checked="" type="checkbox"/> MW Malawi |
| <input checked="" type="checkbox"/> BY Belarus | <input checked="" type="checkbox"/> MX Mexico |
| <input checked="" type="checkbox"/> CA Canada | <input checked="" type="checkbox"/> NO Norway |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein | <input checked="" type="checkbox"/> NZ New Zealand |
| <input checked="" type="checkbox"/> CN China | <input checked="" type="checkbox"/> PL Poland |
| <input checked="" type="checkbox"/> CU Cuba | <input checked="" type="checkbox"/> PT Portugal |
| <input checked="" type="checkbox"/> CZ Czech Republic | <input checked="" type="checkbox"/> RO Romania |
| <input checked="" type="checkbox"/> DE Germany | <input checked="" type="checkbox"/> RU Russian Federation |
| <input checked="" type="checkbox"/> DK Denmark | <input checked="" type="checkbox"/> SD Sudan |
| <input checked="" type="checkbox"/> EE Estonia | <input checked="" type="checkbox"/> SE Sweden |
| <input checked="" type="checkbox"/> ES Spain | <input checked="" type="checkbox"/> SG Singapore |
| <input checked="" type="checkbox"/> FI Finland | <input checked="" type="checkbox"/> SI Slovenia |
| <input checked="" type="checkbox"/> GB United Kingdom | <input checked="" type="checkbox"/> SK Slovakia |
| <input checked="" type="checkbox"/> GD Grenada | <input checked="" type="checkbox"/> SL Sierra Leone |
| <input checked="" type="checkbox"/> GE Georgia | <input checked="" type="checkbox"/> TJ Tajikistan |
| <input checked="" type="checkbox"/> GH Ghana | <input checked="" type="checkbox"/> TM Turkmenistan |
| <input checked="" type="checkbox"/> GM Gambia | <input checked="" type="checkbox"/> TR Turkey |
| <input checked="" type="checkbox"/> HR Croatia | <input checked="" type="checkbox"/> TT Trinidad and Tobago |
| <input checked="" type="checkbox"/> HU Hungary | <input checked="" type="checkbox"/> UA Ukraine |
| <input checked="" type="checkbox"/> ID Indonesia | <input checked="" type="checkbox"/> UG Uganda |
| <input checked="" type="checkbox"/> IL Israel | <input checked="" type="checkbox"/> US United States of America .. (C. I-P) |
| <input checked="" type="checkbox"/> IN India | <input checked="" type="checkbox"/> UZ Uzbekistan |
| <input checked="" type="checkbox"/> IS Iceland | <input checked="" type="checkbox"/> VN Viet Nam |
| <input checked="" type="checkbox"/> JP Japan | <input checked="" type="checkbox"/> YU Yugoslavia |
| <input checked="" type="checkbox"/> KE Kenya | <input checked="" type="checkbox"/> ZA South Africa |
| <input checked="" type="checkbox"/> KG Kyrgyzstan | <input checked="" type="checkbox"/> ZW Zimbabwe |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea | |
| <input checked="" type="checkbox"/> KR Republic of Korea | |
| <input checked="" type="checkbox"/> KZ Kazakhstan | |
| <input checked="" type="checkbox"/> LC Saint Lucia | |
| <input checked="" type="checkbox"/> LK Sri Lanka | |

Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet:

- ☒ ..PG. Papua New Guinea
- ☒ ..CR. Costa Rica .. X. DM. Dominica

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation of a designation consists of the filing of a notice specifying that designation and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.)

Box No. VI PRIORITY CLAIM		<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application:* regional Office	international application: receiving Office
item (1) 27 January 1999	9901807.9	United Kingdom (GB)		
item (2) 28 January 1999	09/238761	USA		
item (3)				

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): 1 (ONE)

* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.

Box No. VII INTERNATIONAL SEARCHING AUTHORITY			
Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used): ISA / EP		Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority): Date (day/month/year) Number Country (or regional Office)	

Box No. VIII CHECK LIST; LANGUAGE OF FILING	
This international application contains the following number of sheets: request : 5 description (excluding sequence listing part) : 28 claims : 7 abstract : 1 drawings : 33 sequence listing part of description : Total number of sheets : 74	This international application is accompanied by the item(s) marked below: 1. <input checked="" type="checkbox"/> fee calculation sheet 2. <input type="checkbox"/> separate signed power of attorney 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: 4. <input type="checkbox"/> statement explaining lack of signature 5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): 6. <input type="checkbox"/> translation of international application into (language): 7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material 8. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form 9. <input type="checkbox"/> other (specify):
Figure of the drawings which should accompany the abstract: 1a)	Language of filing of the international application: English

Box No. IX SIGNATURE OF APPLICANT OR AGENT	
Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request). <div style="text-align: center;"> LLOYD, PATRICK ALEXANDER DESMOND 10 SEPTEMBER 1999 </div>	

For receiving Office use only	
1. Date of actual receipt of the purported international application: 3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application: 4. Date of timely receipt of the required corrections under PCT Article 11(2): 5. International Searching Authority (if two or more are competent): ISA /	2. Drawings: <input type="checkbox"/> received: <input type="checkbox"/> not received: 6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.

For International Bureau use only
Date of receipt of the record copy by the International Bureau:

This sheet is not part of and does not count as a sheet of the international application.

PCT

FEE CALCULATION SHEET Annex to the Request

For receiving Office use only

International application No.

Date stamp of the receiving Office

Applicant's or agent's
file reference

PADL/40303

Applicant

BRITISH BROADCASTING CORPORATION et al.

CALCULATION OF PRESCRIBED FEES

1. TRANSMITTAL FEE

£55

T

2. SEARCH FEE

£638

S

International search to be carried out by

(If two or more International Searching Authorities are competent in relation to the international application, indicate the name of the Authority which is chosen to carry out the international search.)

3. INTERNATIONAL FEE

Basic Fee

The international application contains 74 sheets.

first 30 sheets

£285

b1

44

x

6

=

£264

b2

remaining sheets

additional amount

£549

B

Add amounts entered at b1 and b2 and enter total at B

Designation Fees

The international application contains ALL designations.

10

x

65

=

£650

D

number of designation fees

amount of designation fee

payable (maximum 10)

Add amounts entered at B and D and enter total at I

£1199

I

(Applicants from certain States are entitled to a reduction of 75% of the international fee. Where the applicant is (or all applicants are) so entitled, the total to be entered at I is 25% of the sum of the amounts entered at B and D.)

4. FEE FOR PRIORITY DOCUMENT (if applicable)

£22

P

5. TOTAL FEES PAYABLE

£1914

Add amounts entered at T, S, I and P, and enter total in the TOTAL box

TOTAL

☐

The designation fees are not paid at this time.

MODE OF PAYMENT

☐

authorization to charge
deposit account (see below)

☐

bank draft

☐

coupons

☒

cheque

☐

cash

☐

other (specify):

☐

postal money order

☐

revenue stamps

DEPOSIT ACCOUNT AUTHORIZATION (this mode of payment may not be available at all receiving Offices)

The RO/ GB

☐

is hereby authorized to charge the total fees indicated above to my deposit account.

☒

is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account.

☐

is hereby authorized to charge the fee for preparation and transmittal of the priority document to the International Bureau of WIPO to my deposit account.

D01631

10 SEPTEMBER 1999

Deposit Account No.

Date (day/month/year)

Signature

See Notes to the fee calculation sheet

P/C

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the applicant. The full name or two-letter code of that Authority may be indicated by the applicant on the line below:

IPEA/ EP

PCT

CHAPTER II

DEMAND

under Article 31 of the Patent Cooperation Treaty:

The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty and hereby elects all eligible States (except where otherwise indicated).

For International Preliminary Examining Authority use only

Identification of IPEA		Date of receipt of DEMAND
Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION		Applicant's or agent's file reference PADL/jch/40303
International application No. PCT/GB99/03010	International filing date (day/month/year) 10 September 1999	(Earliest) Priority date (day/month/year) 27 January 1999
Title of invention BROADCAST MEDIA METADATA STRUCTURE		
Box No. II APPLICANT(S)		
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) BRITISH BROADCASTING CORPORATION BROADCASTING HOUSE LANGHAM PLACE LONDON W1A 1AA		Telephone No.:
		Facsimile No.:
		Teleprinter No.:
State (that is, country) of nationality: GB	State (that is, country) of residence: GB	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) CHAN, DAVID 140C, CROXTED ROAD DULWICH, LONDON SE21 8NR		
State (that is, country) of nationality: GB	State (that is, country) of residence: GB	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) ORMROD, TRACY-ANNE 4, FULLAMOOD FARM BARNS CLIFTON, HAMPDEN ABINGDON, OXON GB		
State (that is, country) of nationality: GB	State (that is, country) of residence: GB	
<input checked="" type="checkbox"/> Further applicants are indicated on a continuation sheet.		

Continuation of Box No. II APPLICANT(S)

If none of the following sub-boxes is used, this sheet should not be included in the demand.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

OWENS, CAROL JANET
35, MULGRAVE ROAD
EALING, LONDON W5 1LF
GB

State (that is, country) of nationality:

GB

State (that is, country) of residence:

GB

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

McGREGOR, DIANE MARIE
FLAT 1, 105, VICTORIA ROAD
LONDON
NW6 6TD
GB

State (that is, country) of nationality:

GB

State (that is, country) of residence:

GB

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

CURTIS, WESLEY JONATHAN
36, ALVERSTONE AVENUE
WIMBLEDON PARK
LONDON
SW19 8BE
GB

State (that is, country) of nationality:

GB

State (that is, country) of residence:

GB

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

JORDAN, SMITH JOHN
93, BEDFORD ROAD
WALTHAMSTOW
LONDON
E17 4PU
GB

State (that is, country) of nationality:

GB

State (that is, country) of residence:

GB

☒ Further applicants are indicated on another continuation sheet.

Sheet No. 3

International application No.
PCT/GB99/03010

Continuation of Box No. II APPLICANT(S)

If none of the following sub-boxes is used, this sheet should not be included in the demand.

Name and address: *(Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country.)*

HAYNES, ARTHUR BRIAN
50, HILLCREST ROAD
CAMBERLEY
SURREY GU15 1LG
GB

State *(that is, country)* of nationality:
GB

State *(that is, country)* of residence:
GB

Name and address: *(Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country.)*

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

Name and address: *(Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country.)*

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

Name and address: *(Family name followed by given name: for a legal entity, full official designation. The address must include postal code and name of country.)*

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

☐ Further applicants are indicated on another continuation sheet.

Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The following person is ☒ agent ☐ common representative
and ☒ has been appointed earlier and represents the applicant(s) also for international preliminary examination.
☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.
☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

LLOYD, PATRICK ALEXANDER DESMOND
c/o REDDIE & GROSE
16, THEOBALDS ROAD
LONDON WC1X 8PL

Telephone No.:

+44 020 7242 0901

Facsimile No.:

+44 020 7242 3290

Teleprinter No.:

25445

☐ **Address for correspondence:** Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION

Statement concerning amendments:*

1. The applicant wishes the international preliminary examination to start on the basis of:

☒ the international application as originally filed

the description ☒ as originally filed
☐ as amended under Article 34

the claims ☒ as originally filed
☐ as amended under Article 19 (together with any accompanying statement)
☐ as amended under Article 34

the drawings ☒ as originally filed
☐ as amended under Article 34

2. ☐ The applicant wishes any amendment to the claims under Article 19 to be considered as reversed.

3. ☐ The applicant wishes the start of the international preliminary examination to be postponed until the expiration of 20 months from the priority date unless the International Preliminary Examining Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*

* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Language for the purposes of international preliminary examination: ENGLISH

- ☒ which is the language in which the international application was filed.
☐ which is the language of a translation furnished for the purposes of international search.
☐ which is the language of publication of the international application.
☐ which is the language of the translation (to be) furnished for the purposes of international preliminary examination.

Box No. V ELECTION OF STATES

The applicant hereby elects all eligible States *(that is, all States which have been designated and which are bound by Chapter II of the PCT)*

excluding the following States which the applicant wishes not to elect:

Box No. VI CHECK LIST

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

- | | | |
|--|---|--------|
| 1. translation of international application | : | sheets |
| 2. amendments under Article 34 | : | sheets |
| 3. copy (or, where required, translation) of amendments under Article 19 | : | sheets |
| 4. copy (or, where required, translation) of statement under Article 19 | : | sheets |
| 5. letter | : | sheets |
| 6. other (<i>specify</i>) | : | sheets |

For International Preliminary Examining Authority use only

received	not received
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

The demand is also accompanied by the item(s) marked below:

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> fee calculation sheet | 4. <input type="checkbox"/> statement explaining lack of signature |
| 2. <input type="checkbox"/> separate signed power of attorney | 5. <input type="checkbox"/> nucleotide and or amino acid sequence listing in computer readable form |
| 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: | 6. <input checked="" type="checkbox"/> other (<i>specify</i>): LETTER |

Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).

LLOYD, PATRICK ALEXANDER DESMOND – REPRESENTATIVE

For International Preliminary Examining Authority use only

1. Date of actual receipt of DEMAND:

2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):

3. ☐ The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply. ☐ The applicant has been informed accordingly.

4. ☐ The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5.

5. ☐ Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.

For International Bureau use only

Demand received from IPEA on:

PCT

FEE CALCULATION SHEET

Annex to the Demand for international preliminary examination

International application No. PCT/GB99/03010	For International Preliminary Examining Authority use only
Applicant's or agent's file reference PADL/jch/40303	Date stamp of the IPEA
Applicant BRITISH BROADCASTING CORPORATION et al.	
Calculation of prescribed fees <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="width: 60%;"> 1. Preliminary examination fee </div> <div style="width: 35%; text-align: right;"> EURO 1,533 P </div> </div> <div style="display: flex; justify-content: space-between; align-items: flex-end; margin-top: 20px;"> <div style="width: 60%;"> 2. Handling fee (<i>Applicants from certain States are entitled to a reduction of 75% of the handling fee. Where the applicant is (or all applicants are) so entitled, the amount to be entered at H is 25% of the handling fee.</i>) </div> <div style="width: 35%; text-align: right;"> EURO 147 H </div> </div> <div style="display: flex; justify-content: space-between; align-items: flex-end; margin-top: 20px;"> <div style="width: 60%;"> 3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box </div> <div style="width: 35%; text-align: right;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> EURO 1,680 </div> <div style="border: 1px solid black; padding: 5px; width: 100%;"> TOTAL </div> </div> </div>	
Mode of Payment <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> authorization to charge deposit account with the IPEA (see below) </div> <div style="width: 45%;"> <input type="checkbox"/> cash </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 45%;"> <input type="checkbox"/> cheque </div> <div style="width: 45%;"> <input type="checkbox"/> revenue stamps </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 45%;"> <input type="checkbox"/> postal money order </div> <div style="width: 45%;"> <input type="checkbox"/> coupons </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 45%;"> <input type="checkbox"/> bank draft </div> <div style="width: 45%;"> <input checked="" type="checkbox"/> other (<i>specify</i>): </div> </div> <p style="margin-top: 10px;">Separate debit from our deposit account 2805.0007</p>	
Deposit Account Authorization (<i>this mode of payment may not be available at all IPEAs</i>) The IPEA/ <u>EP</u> <input type="checkbox"/> is hereby authorized to charge the total fees indicated above to my deposit account. <div style="display: flex; align-items: center; margin-top: 10px;"> <input checked="" type="checkbox"/> <div style="margin-left: 10px;"> <i>(this check-box may be marked only if the conditions for deposit accounts of the IPEA so permit)</i> is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account. </div> </div>	
<u>2805.0007</u> Deposit Account Number	<u>21 August 2000</u> Date (day/month/year)
_____ Signature	

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C. 20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 04 September 2000 (04.09.00)	
International application No. PCT/GB99/03010	Applicant's or agent's file reference PADL/40303
International filing date (day/month/year) 10 September 1999 (10.09.99)	Priority date (day/month/year) 27 January 1999 (27.01.99)
Applicant CHAN, David et al	

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

21 August 2000 (21.08.00)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Olivia TEFY Telephone No.: (41-22) 338.83.38
---	---

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(21) International Application Number: PCT/GB99/03010 (22) International Filing Date: 10 September 1999 (10.09.99) (30) Priority Data: 9901807.9 27 January 1999 (27.01.99) GB 09/238,761 28 January 1999 (28.01.99) US (63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 09/238,761 (CIP) Filed on 28 January 1999 (28.01.99) (71) Applicant (for all designated States except US): BRITISH BROADCASTING CORPORATION [GB/GB]; Broadcasting House, Langham Place, London W1A 1AA (GB). (72) Inventors; and (75) Inventors/Applicants (for US only): CHAN, David [GB/GB]; 140c, Croxted Road, Dulwich, London SE21 8NR (GB). ORMROD, Tracy-Anne [GB/GB]; 4 Fullamoor Farm Barns, Clifton, Hampden, Abingdon, Oxon (GB). OWENS, Carol, Janet [GB/GB]; 35 Mulgrave Road, Ealing, London W5 1LF (GB). MCGREGOR, Diane, Marie [GB/GB]; Flat 1, 105 Victoria Road, London NW6 6TD (GB). CURTIS, Wesley,		Jonathan [GB/GB]; 36 Alverstone Avenue, Wimbledon Park, London SW19 8BE (GB). JORDAN, Smith, John [GB/GB]; 93 Bedford Road, Walthamstow, London E17 4PU (GB). HAYNES, Arthur, Brian [GB/GB]; 50 Hillcrest Road, Camberley, Surrey GU15 1LG (GB). (74) Agent: LLOYD, Patrick, Alexander, Desmond; Reddie & Grose, 16 Theobalds Road, London WC1X 8PL (GB). (81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>	
(54) Title: BROADCAST MEDIA METADATA STRUCTURE			
(57) Abstract			
<p>A broadcast media metadata structure is comprised of a number of metadata storage entities related to the media materials, concepts and services defined by the structure. The entities contain a number of storage elements which store metadata relating to a given storage level, and relate to attributes or characteristics of the entity, the storage levels are arranged in a number of mutually consistent hierarchical or non-hierarchical relationships with the storage level at each level above the lowest level relating to the metadata of the immediately lower level. A number of levels of business entities each have business elements related to business metadata. The business elements are linked to the media metadata stores at a storage level appropriate to the business metadata.</p>			

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BROADCAST MEDIA METADATA STRUCTURE

FIELD OF THE INVENTION

This invention relates to methods and systems for storing and exchanging metadata, or data about data, between
5 systems. It is particularly, but not exclusively, concerned with the storage and exchange of metadata associated with media materials, concepts and services within the context of media production and distribution, and its future evolution.

BACKGROUND TO THE INVENTION

10 The changes brought about in the broadcasting industry by the move to digital technology in all aspects of media production and distribution has exposed significant shortcomings in traditional and existing methods and systems.

The proliferation of distribution channels, using both push
15 and pull technologies, has led to an increased demand for media content which cannot be serviced economically through original production alone but relies heavily on re-use. Information is the key to un-locking the re-use value of material, yet the industry has no agreed approach to
20 generating and structuring this crucial data, or metadata, to enable efficient exchange of material between process stages or business parties.

The move away from analogue or physical media capture and storage formats towards digital video, audio, text, stills,
25 graphics and software has created new problems in terms of identifying and managing materials and tracking copyright intellectual properties across multiple incompatible and non-interoperating formats and systems. A video tape, in a box with a label, is a physical object which is managed
30 through well-understood logistical methods. When the video information is transferred as digits into an Information Technology repository such as a server, it cannot be

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distinguished from any other data, whether media or business data.

Such data is not self-identifying; it requires additional metadata to give it meaning, context and value, and that
5 information must be available at any stage during the media production and distribution lifecycle. The lack of common description and management protocols in computer-based systems and among users in the Media domain has already led to loss of material, errors in retrieval and distribution,
10 and accidental copyright infringement.

The emerging capability of digital media formats to support embedded metadata offers an opportunity to attach business information to the audio or video for example, but if there are no standards for generation and exchange of metadata,
15 serious inefficiencies will proliferate and solutions will be hard to find. In addition, early industry thinking about metadata development reflected a view that all metadata might have to be encoded on every section of media however small, such as a video frame or equivalent increment. Thus
20 the business and technical metadata volumes could easily dwarf the media item, making huge demands on storage and slowing down access time, making metadata systems unviable.

At a time when information accuracy and accessibility, and business agility are increasingly vital for the media
25 industry, the new converging technologies are causing fragmentation, data loss, and over-loading on labour-intensive human "fixes". This chaos is exacerbated by the proprietary approaches taken by individual equipment vendors, all with different systems supporting only partial
30 solutions.

Although there are some industrial initiatives underway to stimulate a more open approach, what has been lacking to date has been an overall understanding of the requirements.

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The starting point must be an architectural framework which defines the way in which all the information needed to support media production and distribution in the digital domain (while not excluding analogue technology) can be effectively structured and exchanges between process stages and business parties, and linked the with media to which it relates. Inter-operable systems can then be built to support that architecture, and metadata can be managed efficiently in terms of storage and transfer.

10 SUMMARY OF THE INVENTION

The invention, therefore, aims to provide such an architecture. According to the invention there is provided a method for defining a metadata structure relating to media materials, concepts and services, the method comprising the steps of: defining a plurality of storage entities at a plurality of levels for metadata relating to media materials, concepts and services, the storage entities having a plurality of storage elements and being related with a media metadata subject grouping, and arranged in hierarchical and non-hierarchical relationships allowing an appropriate combination of elements as required; storing metadata relating to a given storage entity in one of a plurality of storage elements of the entity at that level, each storage element representing an attribute or characteristic of the entity subject or media material; arranging media metadata entities and attributes relating directly to the media material, concepts and services in hierarchical and non-hierarchical entity level relationships allowing an appropriate combination of elements are required; and wherein for hierarchical entities, the storage elements of storage entities at a level apart from the lowest level, comprise the storage elements of the immediately lower storage level.

The invention further provides a data structure for defining broadcast media metadata comprising: a plurality of storage

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entities for metadata relating to media materials, concepts and services, the entities being arranged in storage levels and each entity comprising a plurality of storage elements each for storing metadata relating to a given entity, each
5 storage element representing an attribute or characteristic of the entity subject or the media material; wherein the storage levels are hierarchical and non-hierarchical allowing the appropriate combination of elements as required, where the levels are hierarchical, the storage
10 elements of storage entities, apart from the lowest level, comprise the stores of the immediately lower storage level.

The invention still further provides a data structure for defining media metadata comprising: a plurality of storage
15 entities for metadata relating to media production and distribution, the entities being arranged at storage levels and each entity comprising a plurality of storage elements each holding metadata relating to a given entity level, each storage element representing an attribute or characteristic of the entity subject or the media material; a plurality of
20 levels of business entities each comprising storage elements storing business metadata, the business entities being linked to the metadata stores at a storage level dependent on the business element metadata, one of the plurality of levels of business stores comprising a rights level and
25 having one or more storage entities containing business metadata identifying legal rights attached to the media material, the business metadata including the legal jurisdiction of the right, the geographical territory of the right, the duration of the right and the owner of the right;
30 wherein the metadata storage levels are hierarchical and non-hierarchical and, for hierarchical storage levels, the metadata stored in the storage elements of storage entities at a level, apart from the lowest level comprise the stores of the immediately lower storage level.

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The invention also provides a data structure for defining media metadata comprising: a plurality of storage entities for metadata relating to media production and distribution, the entities being arranged at storage levels and each entity comprising a plurality of storage elements each holding metadata relating to a given entity level, each storage element representing an attribute or characteristic of the entity subject or the media material; a rights store linked to at least one of the metadata stores and comprising one or more storage entities containing business metadata identifying legal rights attached to the media material, the business metadata including the legal jurisdiction of the right, the geographical territory of the right, the duration of the right and the owner of the right; wherein the metadata storage levels are hierarchical and non-hierarchical and, for hierarchical storage levels, the metadata stored in the storage elements of storage entities at a level, apart from the lowest level, comprise the stores of the immediately lower storage level.

A method embodying the invention may define a metadata structure relating to media material, concepts and services, which in turn provides a method for defining storage and exchange requirements.

The method comprises of the steps of defining a plurality of storage entities for metadata related to media production and distribution, the entities being associated with a media metadata subject grouping, and arranged in hierarchical and non-hierarchical relationships. Metadata relating to a given storage entity is organised in one of a plurality of storage elements at that level, each element representing an attribute or characteristic of the entity subject or media material.

Media metadata entities and attributes relating directly to media material, concepts and services are arranged

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hierarchically and non-hierarchically allowing the appropriate combinations of metadata to be supported. Where storage levels are hierarchical, the storage elements in stores at the lower levels are linked in defined relationships with stores at the higher levels. The result is a structure for defining metadata, wherein all individual metadata values may be organised according to the entities and relationships defined.

A data structure embodying the invention may define the business data not directly related to media material but vital for its management and exploitation, by defining a plurality of business entities each comprising business elements storing business data, the business stores being related to the media metadata stores at a level dependent on the business element metadata. One or more of a plurality of entities comprises a rights storage entity or entities containing business metadata identifying legal rights attached to the media material, wherein the relationships with the appropriate media metadata are recorded. Where storage levels are hierarchical, the storage elements in stores at the lower levels are linked in defined relationships with stores at the higher levels.

The invention also provides a method of defining a standard media exchange framework comprising the steps of: storing media metadata by the method defined above; defining industry-specific processes involved in media production and distribution, and defining the flow of data between them. The metadata defined by the metadata structure may be mapped on to this process flow, in order to define metadata exchange requirements between different process stages and business areas.

A method embodying the invention may define media metadata and related business metadata exchange requirements by using the process flow definitions on to which the storage

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entities may be mapped, so that the systems requirements at each interface may be identified against a standard structure, providing a framework for systems development and integration. In providing the hierarchical and non-hierarchical structure of storage entities and attributes, the method and data structure serves as a basis for defining standard media metadata exchange requirements between process and business interfaces at an appropriate level of granularity.

Embodiments of the invention have the advantage that metadata related to a media item can be stored in a manner which minimises storage space and minimises retrieval time. A metadata item for a media item need only be stored once and is retrievable at any point in the broadcast media chain. Furthermore, embodiments of the invention allow media exchange formats to be defined which embed certain metadata in the media object, for example into a video frame from where they can be accessed at any point in the broadcast chain.

The term media concept referred to herein refers to an idea for a media item such as a television programme or series of programmes independent of its realisation. It is common in the media industry to buy, sell and licence media concepts and as such they may be regarded as intellectual property.

BRIEF DESCRIPTION OF DRAWINGS

Embodiments of the invention will now be described by way of example, and with reference to the accompanying drawings, in which:

Figure 1a), 1b) and 1c) show three views of an Entity Relationship Diagram embodying the invention;

Figure 2 is an overall process flow diagram illustrating broadcast media production and distribution;

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Figure 3 shows in more detail the CREATE TV/RADIO PROGRAMME process box of figure 2;

Figure 4 shows in more detail the GATHER NEWS process box of figure 2;

5 Figure 5 shows the RESEARCH EVENT process of figure 4 in more detail;

Figure 6 shows ALLOCATE RESOURCES process of figure 4 in more detail;

10 Figure 7 shows the CREATE NEWS PROGRAMMES process of figure 2 in more detail;

Figure 8 shows the SELECT PROGRAMME CONTENT process of figure 7 in more detail;

Figure 9 shows the RESEARCH AND CAPTURE process of figure 7 in more detail;

15 Figure 10 shows the COMMISSION OUTPUT process in more detail;

Figure 11 shows the EVALUATE and SELECT OFFERS process in figure 10 in more detail;

20 Figure 12 shows the DEVISE OUTLINE SCHEDULE process of figure 10 in more detail;

Figure 13 shows the ACQUIRE PROGRAMME/EVENT RIGHT process of figure 2 in more detail;

Figure 14 shows the SCHEDULE & PROMOTE process of figure 2 in more detail;

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Figure 15 shows the CREATE TRANSMISSION SCHEDULE process of figure 14 in more detail;

Figure 16 shows the PLAN & INITIATE ON-AIR PUBLICITY process of figure 14 in more detail;

5 Figure 17 shows the PLAY-OUT AND TRANSMIT process of figure 2 in more detail;

Figure 18 shows the PERFORM PLAY-OUT process of figure 17 in more detail;

10 Figure 19 shows the MANAGE MATERIAL STORE and ARCHIVE process of figure 2 in more detail;

Figure 20 shows the MANAGE INCOMING MATERIAL process of figure 19 in more detail;

Figure 21 shows the RETRIEVE MATERIAL process of figure 19 in more detail;

15 Figure 22 shows the MANAGE RIGHTS AGENCY process of figure 2 in more detail;

Figure 23 shows the PLAN OUTPUT process of figure 2 in more detail;

20 Figure 24 shows the UNDERSTAND AUDIENCE & COMPETITORS process of figure 2 in more detail;

Figure 25 shows the MANAGE RESEARCH STATISTICS process of figure 24 in more detail;

Figure 26 shows the HANDLE AUDIENCE FEEDBACK process of figure 24 in more detail;

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Figure 27 shows the DEAL WITH AUDIENCE FEEDBACK process of figure 24 in more detail; and

Figure 28 shows the PROVIDE RESOURCES TO PROGRAMMES process of figure 2 in more detail.

5 DESCRIPTION OF BEST MODE

In the entity relationship diagram of figures 1a) to 1c), it is shown how a media material item such as a television programme may be described as an interrelated series of entities. The term media material includes any logical whole
10 piece of media for distribution. It may, for example, be a news item, a section of video, a series of data or software or audio. In figure 1a), the central entity is the EDITORIAL OBJECT VERSION 10 together with its sub-types PROGRAMME
15 VERSION 11 and ITEM VERSION 12 (it is assumed that these are included whenever the main entity 10 is referred to). An entity is a logical grouping of data to be stored, retrieved and used. This data is all programme and item metadata as it describes a characteristic or attribute of the PROGRAMME or EDITORIAL OBJECT VERSION. The entity contains a number of
20 data items. Thus, the EDITORIAL OBJECT VERSION entity 10 holds both key and non-key data. The key data for the EDITORIAL OBJECT VERSION entity is the EOV count PK1 and EOC number PK2 which together make up a unique identifier. The tags PK1 and PK2 show the two parts of the primary key. For
25 data to be allocated a primary key it should be unique in its own right or unique when taken with another data item. The primary key is the "way-in" to the information contained within the entity. It can be seen from figure 1a) that all the entities contain key data. Key data is essential to
30 those entities. An entity might only hold key data.

The EDITORIAL OBJECT CONCEPT entity 20 is an example of an entity which holds key metadata which is unique in its own right. Thus, the primary key is simply EOC number PK1.

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In EDITORIAL OBJECT VERSION entity 10, the non-key data relates to editorial information about the programme or item, such as the title, working title, synopsis, etc. Technical information about an EDITORIAL_OBJECT_VERSION is found through other entities such as EDITORIAL_OBJECT_VERSION_INST 30 and MEDIA_OBJECT_INSTANCE 32. The term instance refers to a unique material embodiment of an editorial or media object, whether electronic or physical (eg film), signal stream or file. Different instances can exist of the same object, with different technical attributes.

THE EDITORIAL OBJECT VERSION entity 10 is linked to a number of other entities. As the programme or item is the end product of the creation process, it follows that the vast majority of the other entities will, either directly or indirectly, be linked to the EDITORIAL OBJECT VERSION 10.

The link between entities is a relationship, with the link line showing how the data is related. At the end of the relationship line are two symbols indicating whether the connection is mandatory and whether only one or many connecting entities are to be supported. A particular relationship with only a single symbol indicates an entity being a subtype of another entity.

In the example of figure 1a), the EDITORIAL OBJECT VERSION entity 10 is linked to a number of other entities such as the entity EDITORIAL OBJECT CONCEPT 20, the relationship being that the EDITORIAL OBJECT CONCEPT may give rise to a number of EDITORIAL OBJECT VERSIONS. The EDITORIAL OBJECT VERSION PROGRAMME is linked to the entity SOUND, FORMAT, TYPE, 27, the relationship being "may describe". The EDITORIAL OBJECT VERSION entity 10 is linked to the EDITORIAL OBJECT VERSION INST entity 30 by the relationship "may be instantiated as". A wide variety of terms may be used to describe relationships between entities and the

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terms vary from the very specific, such as "is made up of" to the more vague, such as "has associated".

Many of the entities having relationships with the EDITORIAL OBJECT VERSION 10 in turn have relationships with other entities some of which have relationships with the EDITORIAL OBJECT VERSION entity 10. Thus, the EDITORIAL OBJECT CONCEPT entity 20 has the relationship "may be specified in" with the OFFER LINK EOC entity which in turn has the relationship "may specify" with the OFFER entity 28 which has the relationship "may specify as examples" with the OFFER_LINK_EOV_EXAMPLE entity 67. That latter entity has the relationship "may be specified as examples in" with the EDITORIAL OBJECT VERSION entity 10.

The entity relationship diagrams of figures 1a)-1c) provide a hierarchical and non-hierarchical breakdown of programme content and metadata through media object instances which point to individual media objects. The structure also allows optimal storage of information by linking information to objects at the logical level. Thus, rights, incorporating contributor rights and/or exploitation rights are linked to programmes and at lower levels, through a contract for a particular role, such as rights owner. Thus it can be seen that not all programme metadata need be stored at a very low level, such as on a video frame, as has previously been proposed. The model sets out the entities required to hold metadata for say, a programme at the optimal level, not, for example, duplicating it across low level details such as video frames.

Figures 1a) to 1c) set out the range of metadata hierarchical relationships necessary to support appropriate media metadata structures.

The EDITORIAL_OBJECT_VERSION entity 10 may be instantiated in terms of a number of media object instances which

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represent the physical make up of the item. These are represented by the MEDIA_OBJECT_INSTANCE entity 32. The media object instance is connected to only one of a number of different elements such as shots, audio clip, text, graphics and stills which are determined through the relationship to the entity MEDIA_OBJECT_CONTENT entity 31 to MEDIA OBJECT entity 14 and its associated sub-types. Thus a given media object instance only comprises shots, or stills, etc. Each of these are represented by their own entity.

Stored at each level is metadata relating to the media item at that level. These storage elements can then be combined upwards in a hierarchical and non-hierarchical structure with the data stored at each level being appropriate to that level. Thus, a given piece of metadata only needs to be stored once throughout the whole broadcast chain from commissioning of a programme to transmission and exploitation.

In the digital environment, business and technical data become indistinguishable. It is an advantage of the embodiment that business information can be linked to the appropriate level entity. This again reduces the amount of storage required and avoids the need for business information to be embedded in the individual video or audio frames. One example of this is the STORY entity 25 which is linked to the MEDIA OBJECT and EDITORIAL OBJECT entities 14, 10 via link entities. If the previously assumed constraints were followed, this data would have been embedded at the frame level.

The manner in which the model handles rights is itself novel. As can be seen from figure 1c, the RIGHT entity 61 has RIG number and COM number as key data, and jurisdiction, start date, end date, and condition as non-key data. The condition data item is included to provide a field for storage of additional information required to define the right over and above the jurisdiction, and other

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provided for. The RIGHT entity 61 is linked to the TERRITORY entity 63 through the RIGHT LINK TERRITORY entity 72 along the relationship "is valid in". This allows a series of pre-defined territories for rights management to be specified.

5

Within an organisation's development local equivalent names would be defined as synonyms for the terms used here, different parts of the broadcasting industry may use different terminology. The data dictionary is therefore a compendium of data items with their definitions (complemented with local synonyms) and provides a basis to all the items a broadcaster needs to know about a media item throughout its life cycle with flexibility to cope with specialised terminology and future developments.

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The structure of the data model described has hierarchical and non-hierarchical areas representing different levels of granularity through brand, programme group, programme, item and media objects. The entities are linked by relationships that support the expected connections across sets of metadata necessary to support business functionality. Each of the metadata items in figures 1a) to c) would appear in the data dictionary. Relationships linking data elements to the programme entity provide its CV or Résumé.

25

In figure 1a), the MEDIA OBJECT entity 14 is shown as having five different sub-types: SHOT entity 15, AUDIO CLIP entity 16, TEXT entity 17, GRAPHIC entity 17 and STILL entity 19. Each of these sub-type entities contain metadata relating to the subtype. Thus, the AUDIO CLIP entity contains audio metadata, the GRAPHIC entity, graphic metadata etc.

30

Each of the entities may be realised as a storage entity having a series of storage elements.
Each of the entities may be realised as a storage entity having a series of storage elements.

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An example of the metadata contained in the entity MEDIA OBJECT 14 is as follows:

KEY DATA	NON-KEY DATA
MOB Identifier (PK1)	MOB Title
	MOB Creation Date
	MOB Creation Time
	MOB Description
	Format
	Original Format

5 Examples of entries from the data dictionary for some of the entities shown in figures 1a), b) and c) are as follows:

AUDIO CLIP (16)

10 The entity represents an editorial description of a section of continuous/discrete sound from a defined viewpoint. The sound may be being planned to be captured, edited, or transmitted.

BRAND (22)

15 The name applied to a collection of assets which could include a series of programmes. The assets could cover programmes, books, videos, characters, magazines, toys etc. A brand can be defined at a high level as BBC Sport or as a sub-Brand as Grandstand.

BRIEF (41)

20 The document used by a Commissioning Editor to describe the programme or programmes required for publication. Also known as Commissioning Brief.

GENRE (39)

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A domain-specific conceptual grouping of programmes, e.g. comedy, drama etc. It is because genres are domain specific that a single programme concept may be described in terms of multiple genres.

5 **PROGRAMME CLASSIFICATION (29)**

Used to describe the functional type of programme, for example ordinary scheduled programme, trail, time signal, outlet ident.

PROGRAMME GROUP (21)

- 10 A grouping of programmes with shared identification and branding linked by common character, subject matter, style or story. Could be a series, serial or themed grouping. A fiction series (drama or comedy) will have common characters, themes and/or style between episodes, but
- 15 individual stories. A fictional series will have a common story running across all episodes, with part being told in each. A factual series may have either individual or shared stories/arguments, such as a history series. A series may be occasional or regular in its transmission pattern - a serial
- 20 will always have a prescribed transmission pattern and order. A themed group may draw together programme versions based around a campaign or anniversary.

PROGRAMME TYPE (24)

- 25 Programme Type is the category of programme type taken from a standardised list for transmission to the consumer. Commonly used in RDS delivery, DAB delivery and MPEG-2 delivery. Programme types include News, Sport, Traffic Information, Pop, Classical, with further sub-categorisation. Also used for EPGs.

30 **PUBLICATION EVENT (42)**

This is the window of availability for a consumer to view or listen to a version of a Programme.

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RIGHT (61)

An interest, or permission, which is recognised and protected by law. This entity records the detail of each right which has been acquired for exploitation purposes.

5 **SHOT (15)**

The entity provides the editorial description for a continuous section of moving images from a defined viewpoint, such as video or film. The section may be planned, captured, created from other recorded images or
10 transmitted.

STILL (19)

An editorial description of an image with no duration, but persistence e.g. a photo, or single frame extracted from a shot. The description may apply to a still image that is
15 planned to be taken, captured, edited or transmitted.

SUBJECT REFERENCE (43)

This reference applies to the subject of the material (compared with, for example, the contributors or the action
20 location) and is a "tag" by which a user may retrieve the material.

TEXT (17)

The entity provides an editorial description for a media object that contains alphanumeric content to be included in
25 a presentation e.g. captions, website text, teletext.

To assist in understanding how the data model operates it is helpful to consider a media object such as footage of wildlife. At the MEDIA OBJECT entity level information about this footage is stored such as the identifier, its
30 name, creation date etc as shown in figure 1(a). A simple

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object represents a continuous stream of action. Media objects may only exist conceptually, that is they may not have been captured. When an object is captured the data held at the level of the MEDIA OBJECT entity is complemented by technical information about the digital representation of the action stored in the MEDIA OBJECT CONTENT and MEDIA OBJECT INSTANCE entities 31 and 32. The combination of simple objects to become footage, or to become a compound media object is represented in the MOI SEGMENT USAGE entity 33, the complementary information about any processing applied being stored in the TRANSFORM and TRANSITION entity 38.

The audio clip used, for example in the signature tune for one of the programmes may have rights attached to it and may have been used for other programmes.

Prior to the present invention it was an assumed constraint that all the data represented by the footage would either be to store all of it for each frame of each shot or for it to be largely lost or stored in many places simultaneously. The first of these results in vast storage requirements and the second also has large storage overheads as well as being undesirable. The data model represented by figures 1a) to c) requires each metadata item to be stored only once and the hierarchical and non-hierarchical relationships between the storage objects means that all the information can be retrieved as required. Thus at the programme level one can access all the shot information and at the shot level one can access all the programme information for which that shot has been used. Given the shot data, one can move up the hierarchy through the MEDIA OBJECT, CONTENT, MEDIA OBJECT INSTANCE, EDITORIAL OBJECT VERSION INST and PUBLICATION EVENT entities 31-32 to find out when and in what form the shot has been broadcast.

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The data model gives a representation of the data required by media business processes. The actual processes can be represented by process flow diagrams. Process flow diagrams consist of process, data flows, data stores, and external entities and illustrate the process involved in the broadcast media production chain. In a process box, the action is linked with nouns to describe the process. The diagram does not show how many times the process is executed or any conditions that may prevent the process from being executed. However, the process must be triggered by a data flow. A data flow carries data in a packet into and out of processes and must change the data in some way. The data on the data flow is broken down into data structures and data items/elements. Data may flow to and from an external entity which is a source or recipient of data.

An external entity is a person, role organisation or body that is outside the area represented by the process flow diagram and not necessarily to the organisation as a whole. A data store is a repository (possible temporary) of data. Everything in it should be retrieved and used by a process somewhere and data stored must be placed there by a process. Figure 2 shows the content creation and distribution process flow diagram for a broadcasting organisation. Figures 3 - 28 show process flow diagrams for each of the processes illustrated in figure 2.

Thus the content creation and distribution process is broken down into twelve processes. Each of these processes are in turn broken down into a number of sub-processes. Central to this is CREATE TV/RADIO PROGRAMME 72 which has data flows from sources 74, 76 which represent an external archive and a contributor. The data flow from the archive 74 represents information and footage. Data flows both from and to the contributor, the flow into the contributor being contractual and the flow from the contributor being availability. There

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is further flow of data to an external entity 77 representing billing to broadcasting data services.

5 The process 72 has a data flow between the process PROVIDE RESOURCES to PROGRAMMES 78, the flow from the CREATE TV/RADIO PROGRAMME process 72 representing bookings and demand forecast and the flow to the process representing resources, equipment, studios and quotes.

10 The process CREATE TV/RADIO PROGRAMME 72 has data flow to the process COMMISSION OUTPUT 82 with data representing offers flowing from the CREATE TV/RADIO PROGRAMME 72 process to the commission output process and data representing commissioning brief, and offer response flowing to the CREATE TV/RADIO PROGRAMME process. Data included in
15 production contract will flow both ways. The CREATE TV/RADIO PROGRAMME process 72 will exchange data with the PLAY-OUT and TRANSMIT process 84 with the flow of data to PLAY-OUT and TRANSMIT process 84 representing programme feed and the data flow to the CREATE TV/RADIO PROGRAMME 72 representing a confirmed transmission. The data will flow from the CREATE
20 TV/RADIO PROGRAMME process 72 to the process SCHEDULE and PROMOTE 86. That flow represents promotional material and presentation details.

25 Data is exchanged between the CREATE TV/RADIO PROGRAMME 72 process and the MANAGE MATERIAL STORE & ARCHIVE process 90. The data flow from the CREATE TV/RADIO PROGRAMME process represents pre-recorded programme tape, enquiries, rushes and documents together with transmitted programmes. The flow from the archive process 90 represents information and footage. Finally, there is a flow of data from the process
30 ACQUIRE PROGRAMME EVENT RIGHT 92 to the CREATE TV/RADIO PROGRAMME process which represents an insert of programme or broadcast right.

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The CREATE TV/RADIO PROGRAMME process 72 is illustrated in more detail in figure 3.

5 The CREATE TV/RADIO PROGRAMME process 72 may be broken down into 6 sub-processes as follows: RESEARCH AND SUBMIT OFFER 196; PLAN PROGRAMME 198; PREPARE AND RESEARCH 200; CAPTURE MATERIAL 202; MANIPULATE MATERIAL 204; and DELIVER PROGRAMME.

10 As can be seen from figure 3, these processes involve the flow of data to and from 3 stores: PROGRAMME CONTENT 207; PROGRAMME INFORMATION 210; and PRODUCTION SCHEDULE 212.

15 Figure 2 shows a STORE 100 which represents the programming schedule. Data flows from the SCHEDULE STORE 100 to the SCHEDULE & PROMOTE PROCESS 86 representing MASTER SCHEDULE data. MASTER SCHEDULE data also flows from the commission output process to the SCHEDULE STORE 100. Data also flows to the SCHEDULE STORE 100 from the SCHEDULE & PROMOTE process 86 representing trail details and confirmed timings and from the play-out and transmit process 84 representing actual start and finish times.

20 The PROVIDE RESOURCES TO PROGRAMMES process is shown in more detail in figure 28. The process is broken down into six sub-processes: PROVIDE QUOTES & TAKE BOOKINGS 212; SET UP, MONITOR AND MANAGE JOB 214; PROVIDE RESOURCES 216; MANAGE PROJECT FINANCES 218; ESTABLISH COST OF PRODUCTS AND SERVICES 220; and FORECAST DEMANDS OF PRODUCTS AND SERVICES 222.

These sub-processes draw information from and send data to three stores; SCHEDULE & COSTING INFORMATION 224, PROJECT PLAN AND DOCUMENTATION 226 and EXPERIENCE LIBRARY 226.

30 News within the organisation is represented by 2 processes; CREATE NEWS PROGRAMMES 88 and GATHER NEWS 94. The GATHER

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NEWS process receives data flow from 6 external data sources: NEWS EDITORS 96, REGIONAL NEWS 98, NEWSROOM 102, EXTERNAL NEWS PROVIDERS 104, THE PUBLIC/AGENCIES AND WIRES 106 AND EXTERNAL ARCHIVES 108. The data flow from NEWS EDITORS 96 represents guidance, from REGIONAL NEWS 98 and the NEWSROOM represents prospects and also from the NEWSROOM availability, from the EXTERNAL NEWS PROVIDERS 104 represents knowledge of competition, from PUBLIC/AGENCIES AND WIRE 106 represents prospects and diary events and from EXTERNAL ARCHIVE represents information and footage. Data flow is also received from the MANAGE MATERIAL STORE & ARCHIVE process 90 representing information and footage. Data flows from the GATHER NEWS process 94 is to the NEWSROOM 102 representing an assignment, to the EXTERNAL ARCHIVE 108 representing an enquiry, to the MANAGE MATERIAL STORE & ARCHIVE 90 also representing an enquiry and to the CREATE NEWS PROGRAMMES process 88 representing a potential news item and an event, outline or story.

The GATHER NEWS process 94 is illustrated in more detail in figures 4-6 and comprises three sub-processes MAINTAIN DAILY PROSPECTS 110, ALLOCATE RESOURCES 112 and RESEARCH EVENT 114. The RESEARCH EVENT and ALLOCATE RESOURCES processes are illustrated in detail in figures 5 & 6.

The CREATE NEWS PROGRAMMES process 88, in addition to the data flows already described, exchanges data with the EXTERNAL ARCHIVE source 108 by way of enquiries to the archive and information and footage from the archive. Data flow to the MANAGE MATERIAL STORE & ARCHIVE process 90 represents enquiries, rushes and documents, together with pre-recorded programme tape whereas data flow from the MANAGE MATERIAL STORE & ARCHIVE process 90 represents information and footage. Data flow to the SCHEDULE AND PROMOTE process 86 represents promotional material and presentation details and data flow to the PLAY-OUT and TRANSMIT process 84 represents programme feed.

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The CREATE NEWS PROGRAMME process is illustrated in more detail in figures 7-9 and comprises 4 sub-processes: SELECT PROGRAMME CONTENT 116, RESEARCH & CAPTURE 118, COMPILE PROGRAMME 120 and EDIT 122. The SELECT PROGRAMME content process is shown in more detail in figure 8 and the RESEARCH AND CAPTURE process is shown in more detail in figure 10. The SELECT PROGRAMME CONTENT process is broken down into four sub-processes: FINALISE NEWS ITEMS 228, ALLOCATE ROUGH TIMINGS 230, ALLOCATE PRODUCTION TEAM 232 and CREATE DRAFT TREATMENT 234. These processes draw a data from a PROSPECTS store 234. The ALLOCATE PRODUCTION TEAM process also draws on available production staff data from a PRODUCTION ROTA store 236.

The COMMISSION OUTPUT process 82, as well as the data flows described with the CREATE TV/RADIO PROGRAMME process 72 receives data from a STORE 124 which represents the controllers stock of untransmitted material. Data is also received from an external entity, representing offers from EXTERNAL PRODUCTION BODIES 126. Data flows from the COMMISSION OUTPUT process to the EXTERNAL PRODUCTION BODY 126 in the form of commissioning briefs, offer responses and production contracts. A second external recipient of data is the CORPORATE CENTRE 128 which receives data relevant to actual versus planned quotas. The COMMISSION OUTPUT process 82 also receives data flow from the SCHEDULE STORE 100 and from a process PLAN OUTPUT SERVICE 130. The data from the STORE represents available slots and the data from the plan output service represents strategic output plan. Data in the form of requirements is sent to the SCHEDULE STORE 100. Data flows from the COMMISSION OUTPUT process to an UNDERSTAND AUDIENCE & COMPETITORS process 132 in the form of information requirements and flows from the UNDERSTAND AUDIENCE & COMPETITORS to the COMMISSION OUTPUT process in the form of filtered statistics.

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The COMMISSION OUTPUT process is shown in more detail in figures 10-12 and comprises four processes: DEVISE OUTLINE SCHEDULE 134, EVALUATE AND SELECT OFFICERS 136, NEGOTIATE AND AWARD COMMISSION 138 and CHECK WITH QUOTA TARGETS 140.

5 The ACQUIRE/PROGRAMME EVENT RIGHT 92 process involves data flow between an external source representing the EVENT RIGHT HOLDER 142 with the data representing negotiation and contract and also flow of data in from EXTERNAL EVENT ORGANISERS 144 representing possible events to cover. Data
10 flows to an EXTERNAL SOURCE 146 representing other distributors. Data representing negotiation and contract flows both ways to and from that source and data to that source represents "ancillary rights which could be sold" and from the source represents "potential acquisitions and
15 programme and paperwork information".

The ACQUIRE PROGRAMME/EVENT RIGHT process 92 is illustrated in more detail in figure 13. The process 92 is broken down into five sub-processes: IDENTIFY ACQUISITIONS & EVENTS 238, NEGOTIATE & AGREE CONTRACT 240, SELL ANCILLARY RIGHTS 242,
20 MAINTAIN ACQUIRED STOCK 244 AND ALLOCATE PROGRAMME TO SLOT 246. The sub-processes make use of data in the CONTROLLERS STOCK STORE 124, the SCHEDULE STORE 100 and a RIGHTS STORE 248.

The SCHEDULE AND PROMOTE process 86, in addition to the data
25 flows already described, receives a flow of data from the UNDERSTAND AUDIENCE & COMPETITORS process representing upheld complaints regarding the content of a broadcast and sends data to the BROADCASTING DATA SERVICES SOURCE 77 representing weekly schedules and data to a recipient
30 representing press and public relations 148 regarding off-air publicity and promotions. Data flows from the SCHEDULE AND PROMOTE process also to the UNDERSTAND AUDIENCE & COMPETITORS process representing information requirements. Data also flows to the PLAY-OUT & TRANSMIT process

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representing on-air publicity and promotions and schedule and continuity script. Data representing a tape list flows to the MANAGE MATERIAL STORE & ARCHIVE process 90.

5 The SCHEDULE AND PROMOTE process is illustrated in more detail in figures 14-16. The SCHEDULE & PROMOTE process is broken down into three sub-processes: CREATE, TRANSMISSION SCHEDULE 250, PLAN & INITIATE ON-AIR PUBLICITY 252 AND PLAN & INITIATE OFF-AIR PUBLICITY 254. Each of these processes relies on data flow to and from the SCHEDULE STORE 100. The
10 CREATE TRANSMISSION SCHEDULE process is shown in more detail in figure 16 and the PLAN & INITIATE ON-AIR PUBLICITY process is shown in more detail in figure 16.

15 The PLAY-OUT AND TRANSMIT process 84, in addition to the data flows described already sends information requirements to the UNDERSTAND AUDIENCE & COMPETITORS process 132, transmitted programme data, transmission log and original documents to the MANAGE MATERIAL STORE & ARCHIVE process 90. Pre-recorded tape information is received from the MANAGE MATERIAL STORE & ARCHIVE process and completed contract
20 information flows to a MANAGE RIGHTS AGENCY process 150. Distribution data flows to, and transmission service data flows from an External source/recipient labelled DISTRIBUTION SERVICE PROVIDER 152.

25 The PLAY-OUT AND TRANSMIT process is illustrated in more detail in figures 17 & 18. The PLAY-OUT & TRANSMIT process comprises 4 sub-processes: PERFORM PLAY-OUT 256, CAPTURE ACTUAL TRANSMISSION DETAILS 258, INITIATE POST-TRANSMISSION RIGHTS PAYMENT 260 and PERFORM PROMOS ANALYSIS 262. These processes draw on data from the SCHEDULE 100 and from a
30 store of research statistics 264. The PERFORM PLAY-OUT sub-process is shown in more detail in figure 18.

The MANAGE MATERIAL STORE & ARCHIVE process 90, in addition to the data flows described already receives a data flow

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from the UNDERSTAND AUDIENCE & COMPETITORS process 132 in the form of request for tapes and sends data to that process in the form of pre-recorded programme tapes. Data flow from two external sources, EXTERNAL ARCHIVE 154 and ARCHIVE STEERING GROUP 156 represent material and rights flowing from outside the Organisation and strategic direction respectively.

The MANAGE MATERIAL STORE & ARCHIVE process is illustrated in more detail in figures 19-21. The MANAGE MATERIAL STORE & ARCHIVE process may be broken down into three sub-processes as shown in figure 19. These processes are CREATE ARCHIVING POLICY 266, MANAGE INCOMING MATERIAL 268 and RETRIEVE MATERIAL 270. The latter two sub-processes draw on data in a MATERIAL STORE & ARCHIVE 272. The MANAGE INCOMING MATERIAL sub-process is shown in more detail in figure 20 and the RETRIEVE MATERIAL sub-process is shown in more detail in figure 21.

The MANAGE RIGHTS AGENCY process 150 will receive data flow representing Union & Framework Agreements from a source representing Union & Industry Bodies 156 and data will flow to a recipient representing Worldwide product Licences 158. The MANAGE RIGHTS AGENCY process is illustrated in more detail in figure 22.

The PLAN OUTPUT service process 130 receives data flows from external sources representing the chief executive broadcast 160, the Government 162 and any relevant legislation represented here by the Broadcasting Act 1990, 164. Data also flows from the UNDERSTAND AUDIENCE & COMPETITORS process in the form of filtered statistics. Data is output to the SCHEDULE 100 in the form of news slots, to the COMMISSION OUTPUT process 82 in the form of strategic output plans and to the CREATE NEWS PROGRAMMES process 88 in the form of guaranteed news output. The plan output service is illustrated in more detail in figure 23.

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The UNDERSTAND AUDIENCE & COMPETITORS process gathers information from a variety of external sources such as the Government 162 in the form of broadcasting requirements, for example under a broadcasting charter, from broadcasting industry monitoring services in the form of viewer/listener statistics, quote requests and contracts and other research results, from viewers and listeners in the form of complaints and feedback. Information flows to external sources in the form of published statistics to an annual report, reports and statistics to a given channel controller, responses to viewers and listeners and requests to statistical gathering agencies. The UNDERSTAND AUDIENCE & COMPETITORS process is illustrated in more detail in figures 24-27. The UNDERSTAND AUDIENCE & COMPETITORS process can be broken down into two sub-processes: MANAGE RESEARCH STATISTICS 274 and HANDLE AUDIENCE FEEDBACK 276. These sub-processes are shown in more detail in figures 25 & 26 respectively. Figure 26 shows that the HANDLE AUDIENCE FEEDBACK sub-process can be further sub-divided into two more sub-processes: DEAL WITH AUDIENCE FEEDBACK 278 and INVESTIGATE COMPLAINTS 280. The DEAL WITH AUDIENCE FEEDBACK sub-process is further illustrated in figure 27.

A combination of the data model of figures 1a) to c) and the PROCESS flow diagram of figure 2 can be used to develop a standard media exchange framework. This sets out the metadata items which must be associated with media material, concepts or services at each level of the entity model and can be used to define the exchange at each process interface.

An example of a possible exchange framework interface is the data which is required to be created by or loaded into a capture device such as a camera. This requires standardisation amongst camera manufacturers. Some of that information might then be imported into the device from a data store before capture, to be embedded with a media

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material as it is created, then it and new data subsequently exported into an information system for media management purposes, or for access by an editing system for onward processing. Rather than capture the data at the end of a process, data is captured as it happens and is perpetuated.

The media exchange architecture described enables the linking of media materials together with their metadata in a way which enables extremely efficient development, re-use and re-purposing of media in an integrated but distributed device and database.

Application of the data structure described enables systems to be built which will integrate converging requirements of broadcast and media business systems. Systems which are compliant with this structure will be easier to integrate as the data exchange standard will be consistent regardless of the internal storage schemes used. Systems which are compliant in their internal storage schemes will also be optimumly efficient in their use of storage. Specific examples of systems which can be made compliant include media commissioning and scheduling systems, systems to support content production process, broadcast play-out systems, Internet websites, customer feedback capture systems, content asset management systems, intellectual property right systems and archive systems.

The data structure is typically implemented in software, for example the data dictionary may be held in a software repository.

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CLAIMS

1. A method for defining a metadata structure relating to media materials, concepts and services, the method comprising the steps of:

5 defining a plurality of storage entities at a plurality of levels for metadata relating to media materials, concepts and services, the storage entities having a plurality of storage elements and being related with a media metadata subject grouping, and arranged in hierarchical and non-
10 hierarchical relationships allowing an appropriate combination of elements as required;

storing metadata relating to a given storage entity in one of a plurality of storage elements of the entity at that level, each storage element representing an attribute or
15 characteristic of the entity subject or media material;

arranging media metadata entities and attributes relating directly to the media material, concepts and services in hierarchical and non-hierarchical entity level relationships allowing an appropriate combination of
20 elements are required; and

wherein for hierarchical entities, the storage elements of storage entities at a level apart from the lowest level, comprise the storage elements of the immediately lower storage level.

25 2. A method according to claim 1, wherein the storage entities include an editorial object concept entity which may give rise to one or more editorial object version entities, wherein the metadata stored within the editorial object concept entity is related to the editorial object
30 version entity, the version entity comprising the immediately lower storage level.

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3. A method according to claim 2, wherein the storage entities include a programme version level and an item version level, the programme version level and the item version level being subtypes of the editorial object version.

4. A method according to claim 3, wherein the storage entities include a media object level, and the programme version and item version entities are related to media object metadata, the media objects comprising the immediate lower level.

5. A method according to claim 4, wherein the media object level includes occurrences of individual media types as sub types.

6. A method according to claim 5, wherein the media object includes an audio level subtype and the storage elements relate to audio metadata.

7. A method according to claim 5, wherein the media object level includes a text level sub-type and the metadata storage elements relate to text metadata.

8. A method according to claim 5, wherein the media object level includes a graphics level subtype and the media object level storage elements relate to graphics metadata.

9. A method according to claim 5, wherein the media object level includes a stills level subtype and the media object level storage elements relate to stills metadata.

10. A method according to claim 1, further comprising storing the entity and attribute definitions as a metadata dictionary, wherein metadata occurrences are defined to be consistent with the metadata dictionary.

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11. A method according to Claim 10, wherein the dictionary further includes acceptable synonyms for at least some of the metadata.

12. A method according to claim 1 further comprising
5 defining a plurality of levels of business stores each comprising business elements each relating to business metadata, the business stores being linked to the metadata stores at a storage level dependent on the business element metadata.

10 13. A method according to claim 12, wherein one of the plurality of levels of business stores comprises a rights level comprising one or more related entities containing business metadata identifying legal rights attached to the media material, the business metadata including the legal
15 jurisdiction of the right, the geographical territory of the right, the duration of the right and the owner of the right.

14. A method according to claim 1 wherein the media material is a radio, television or Internet material or associated or derived product.

20 15. A method according to claim 1, wherein the storage levels cover the distributed media supply chain extending from service proposition to audience consumption.

16. A method according to claim 1, comprising defining a plurality of mutually consistent hierarchies of storage
25 levels.

17. A method of defining a standard media exchange framework comprising the steps of:

defining a media metadata structure according to the method of claim 1,

30 defining a process flow model reflecting the media production and distribution chain; and

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defining metadata items for exchange between one process in the media production and distribution chain and another.

18. A data structure for defining broadcast media metadata comprising:

5 a plurality of storage entities for metadata relating to media materials, concepts and services, the entities being arranged in storage levels and each entity comprising a plurality of storage elements each for storing metadata relating to a given entity, each storage element
10 representing an attribute or characteristic of the entity subject or the media material;

wherein the storage levels are hierarchical and non-hierarchical allowing the appropriate combination of
15 elements as required, where the levels are hierarchical, the storage elements of storage entities, apart from the lowest level, comprise the stores of the immediately lower storage level.

19. A structure according to claim 18, wherein the storage
20 entities include an editorial object concept entity which may give rise to one or more editorial object version entities, wherein the metadata stored within the editorial object concept entity is related to the editorial object version entity, the editorial object version entity
25 comprising the immediately lower storage level.

20. A structure according to claim 19, wherein the storage
entities include an item version level and a programme version level, each of the item version level and the programme version level being subtypes of the editorial
30 objection version entity.

21. A structure according to claim 20, wherein the programme version and item version entities relate to media

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object metadata, the media objects comprising the immediately lower level.

22. A structure according to claim 21, wherein the media object level includes occurrences of individual media types as subtypes.

23. A structure according to claim 22, wherein the media object level includes an audio level subtype and the storage elements relate to audio metadata.

24. A structure according to claim 22, wherein the media object level includes a text level subtype and the storage elements relate to text metadata.

25. A structure according to claim 22, wherein the media object level includes a graphics level and the storage elements relate to graphics metadata.

26. A structure according to claim 22, wherein the media object level includes a stills level and the media object level storage elements relate to stills metadata.

27. A structure according to claim 18, further comprising a metadata dictionary having stored therein entity and attribute definitions, wherein the metadata occurrences are defined to be consistent with the metadata dictionary.

28. A structure according to claim 27, wherein the dictionary further includes acceptable synonyms for at least some of the metadata.

29. A structure according to any of claims 18 to 28 comprising entities relating to editorial requirements and entities relating to instantiation requirements.

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30. A structure according to claim 18 further comprising a plurality of levels of business entities each comprising storage elements related to business metadata, the business elements being linked to the media metadata entities at a storage level dependent on the business element metadata.

31. A structure according to claim 30, wherein one of the plurality of levels of business storage elements comprises a rights level and includes one or more entities containing business metadata identifying legal rights attached to the media material, the business metadata including the legal jurisdiction of the right, the geographical territory of the right, the duration of the right and the owner of the right.

32. A structure according to claim 18 wherein the media material is a radio, television or Internet material or associated or derived product.

33. A structure according to claim 18, wherein the storage levels cover the broadcast media supply chain extending from service proposition to audience consumption.

34. A structure according to claim 18, including a plurality of mutually consistent hierarchies of storage levels.

35. A data structure for defining media metadata comprising:

a plurality of storage entities for metadata relating to media production and distribution, the entities being arranged at storage levels and each entity comprising a plurality of storage elements each holding metadata relating to a given entity level, each storage element representing an attribute or characteristic of the entity subject or the media material;

a plurality of levels of business entities each comprising storage elements storing business metadata, the

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business entities being linked to the metadata stores at a storage level dependent on the business element metadata, one of the plurality of levels of business stores comprising a rights level and having one or more storage entities
5 containing business metadata identifying legal rights attached to the media material, the business metadata including the legal jurisdiction of the right, the geographical territory of the right, the duration of the right and the owner of the right;

10 wherein the metadata storage levels are hierarchical and non-hierarchical and, for hierarchical storage levels, the metadata stored in the storage elements of storage entities at a level, apart from the lowest level comprise the stores of the immediately lower storage level.

15

36. A data structure for defining media metadata comprising:

a plurality of storage entities for metadata relating to media production and distribution, the entities being
20 arranged at storage levels and each entity comprising a plurality of storage elements each holding metadata relating to a given entity level, each storage element representing an attribute or characteristic of the entity subject or the media material;

25

a rights store linked to at least one of the metadata stores and comprising one or more storage entities containing business metadata identifying legal rights attached to the media material, the business metadata including the legal jurisdiction of the right, the
30 geographical territory of the right, the duration of the right and the owner of the right;

wherein the metadata storage levels are hierarchical and non-hierarchical and, for hierarchical storage levels, the metadata stored in the storage elements of storage
35 entities at a level, apart from the lowest level, comprise the stores of the immediately lower storage level.

FIG. 1a

FIG. 1a(i)	FIG. 1a(ii)	
FIG. 1a(IV)	FIG. 1a(V)	
FIG. 1a(VI)	FIG. 1a(VII)	
FIG. 1a(III)		

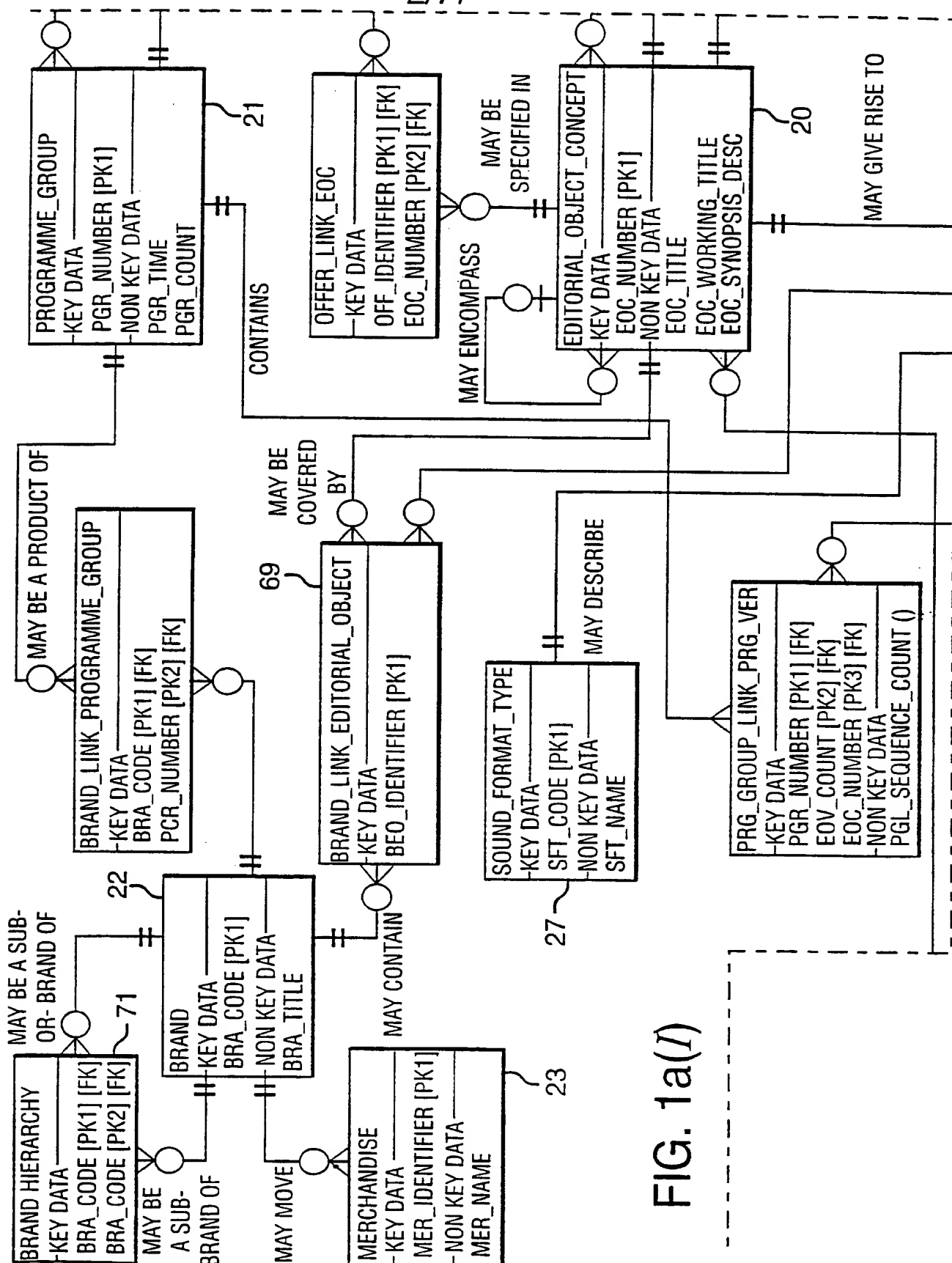
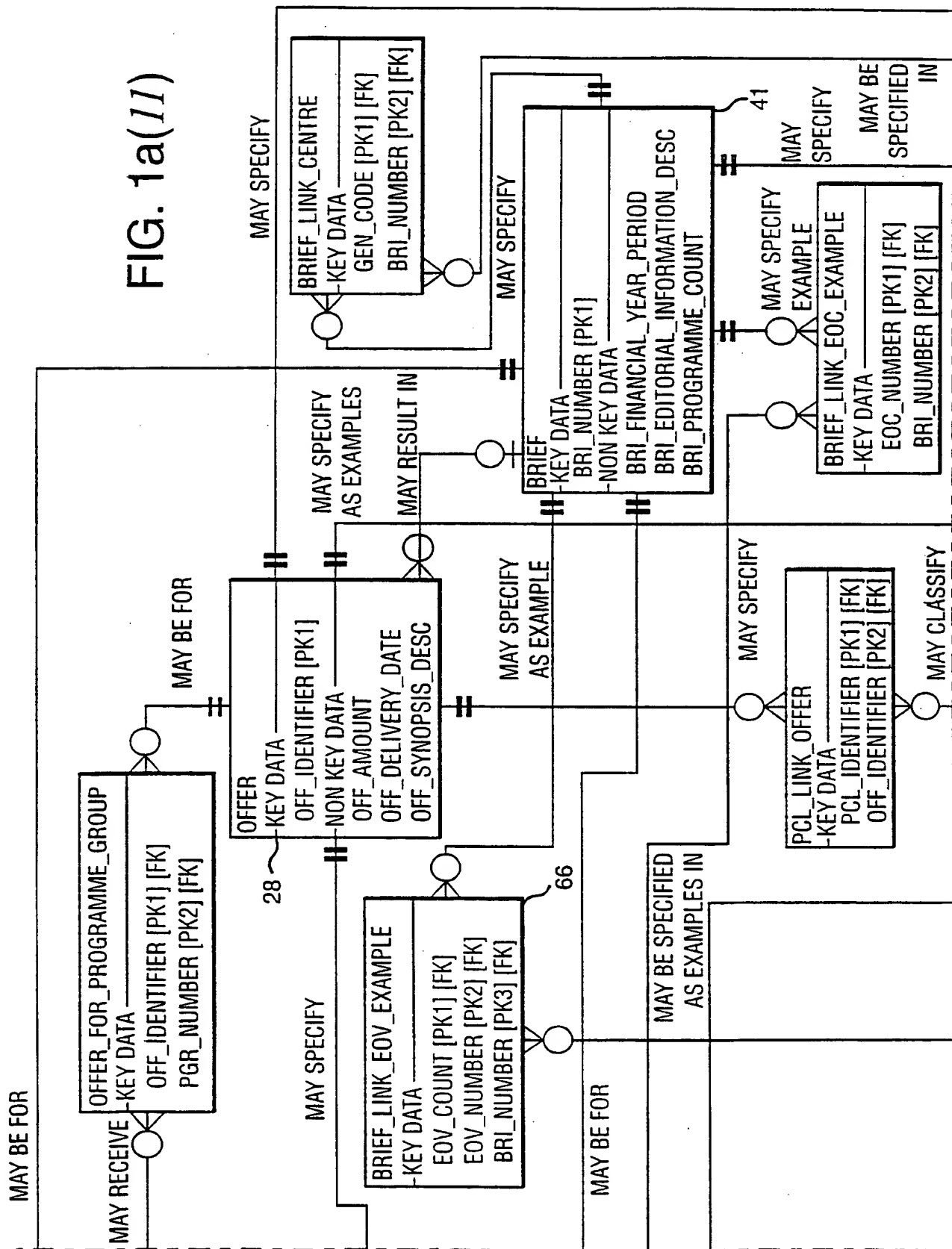


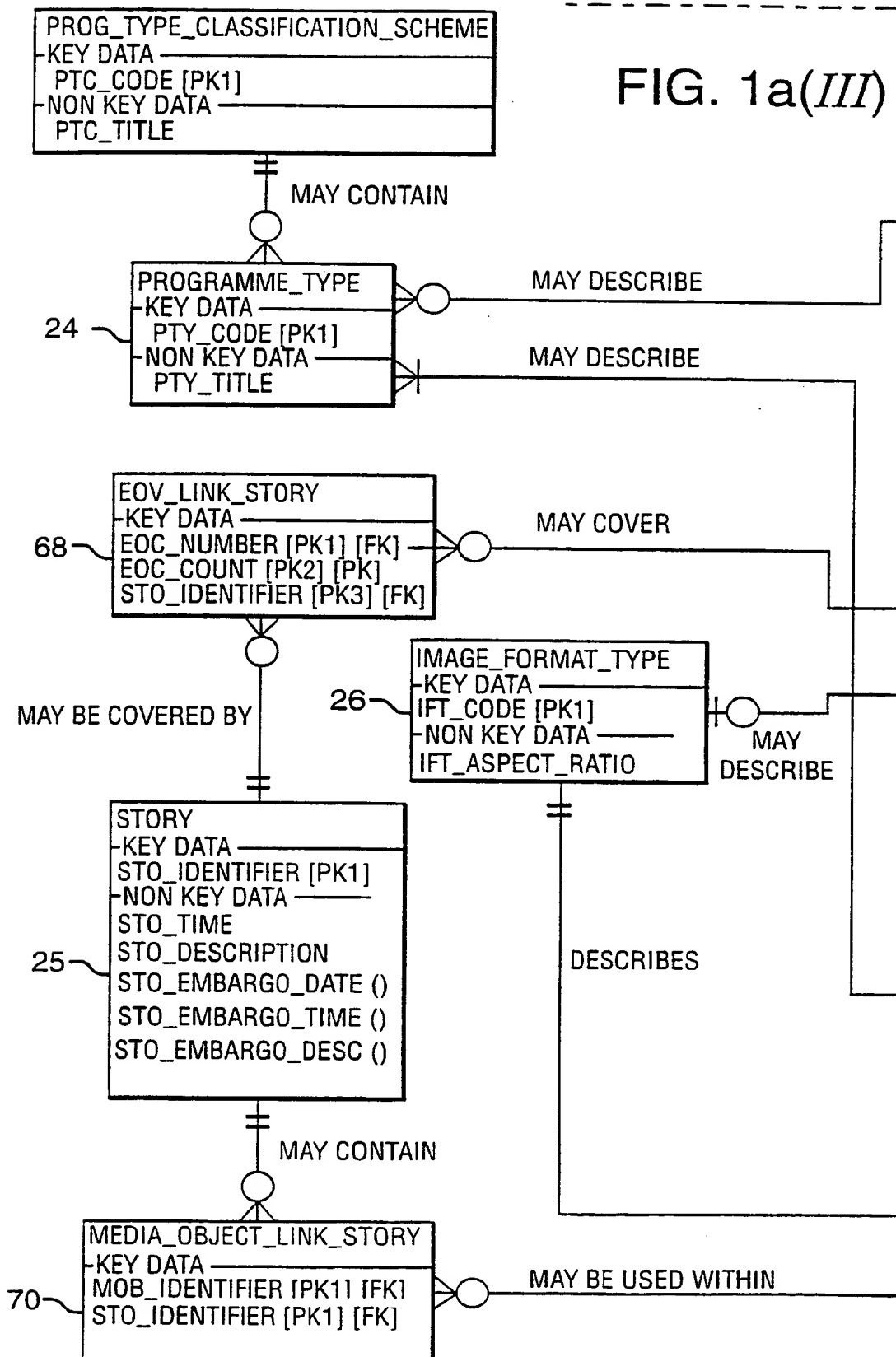
FIG. 1a(I)

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FIG. 1a(II)

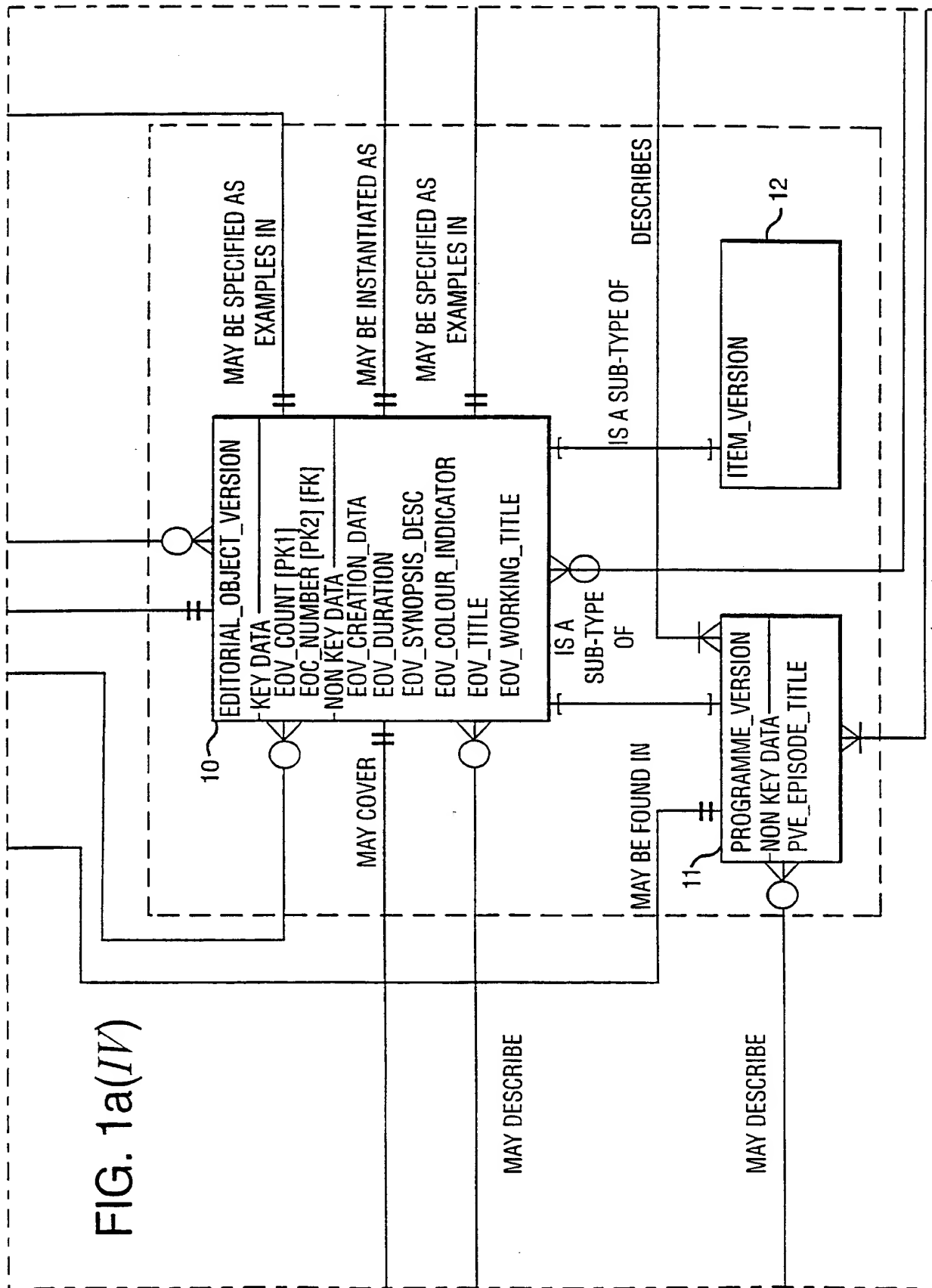


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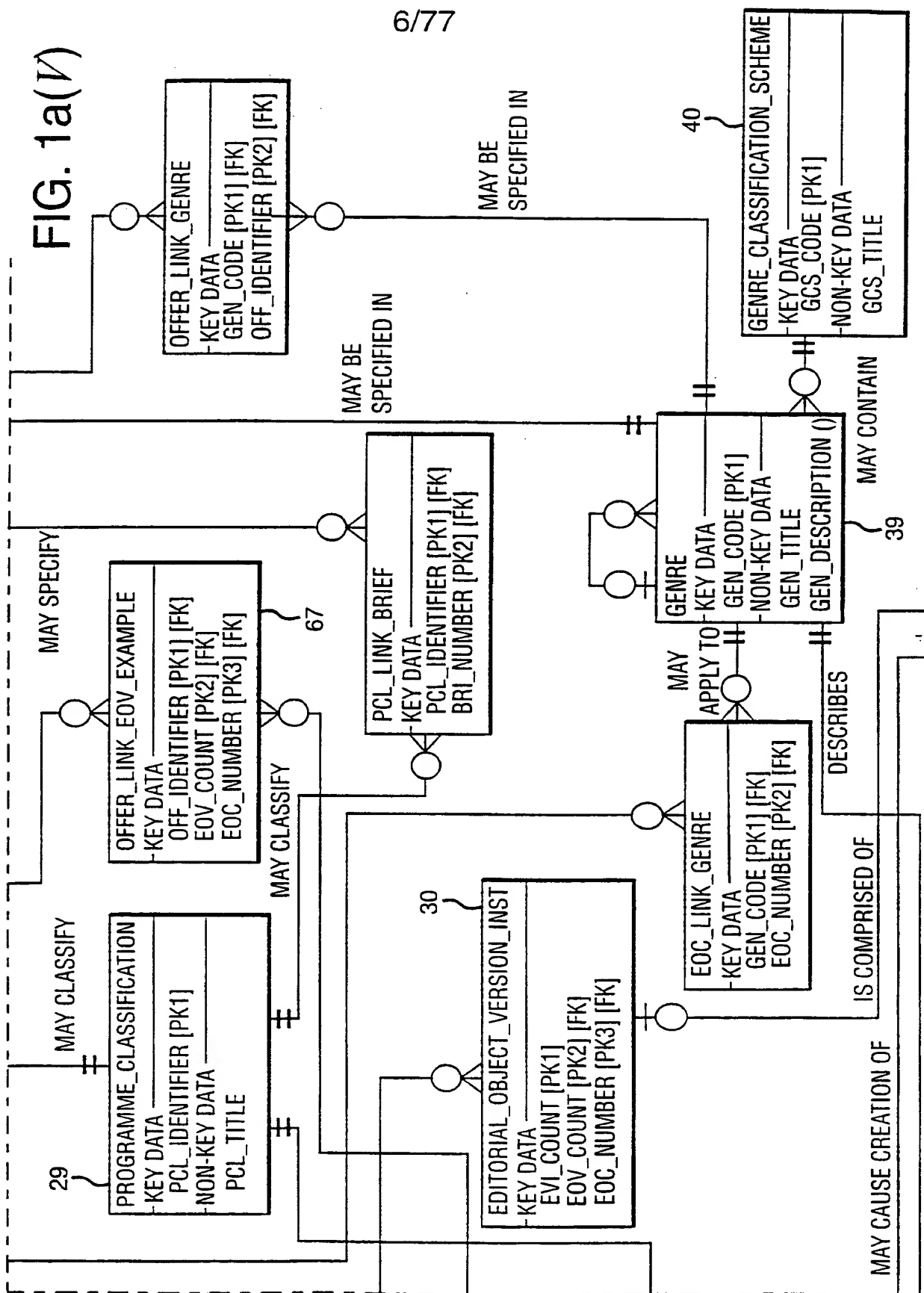
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FIG. 1a(M)



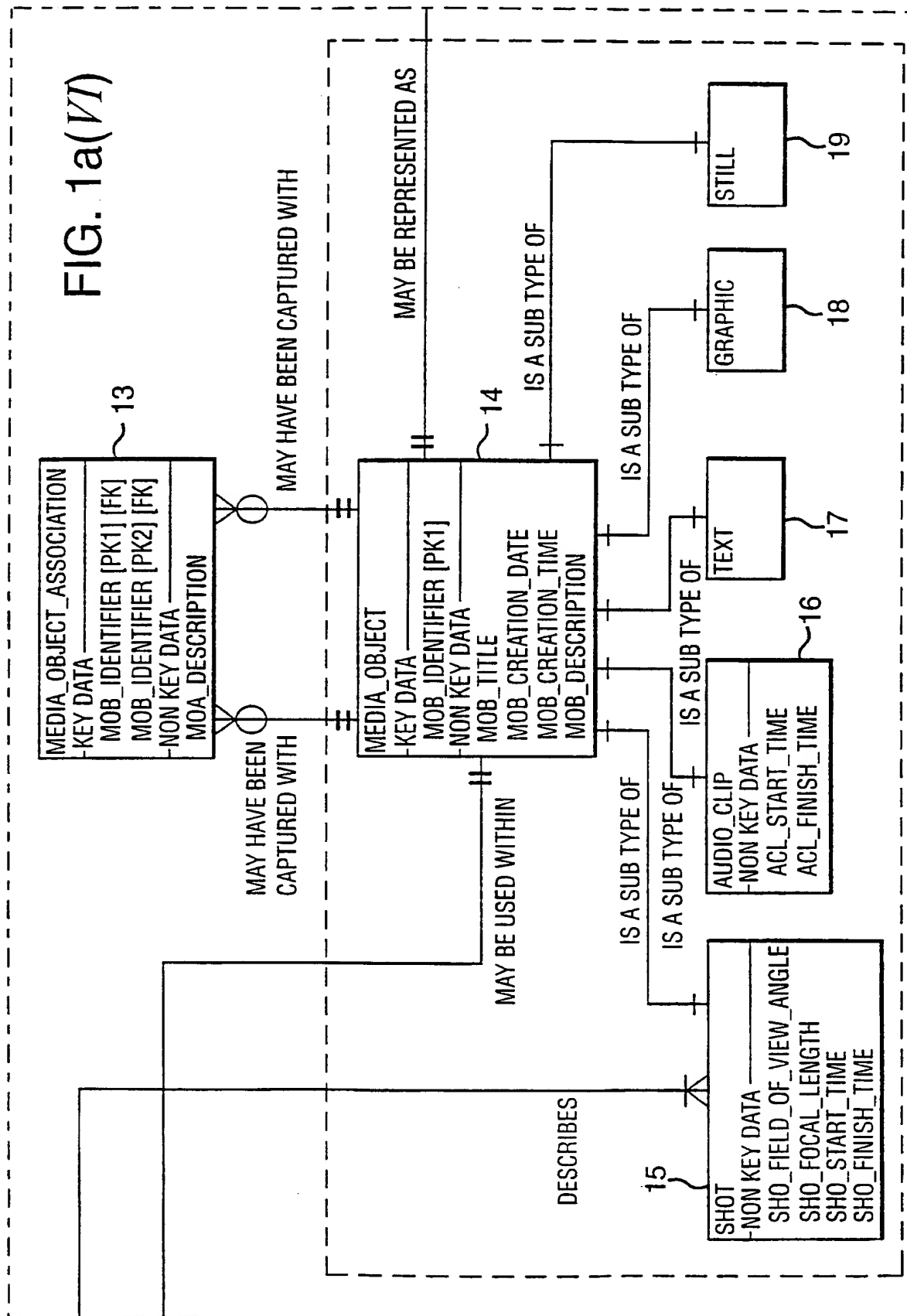
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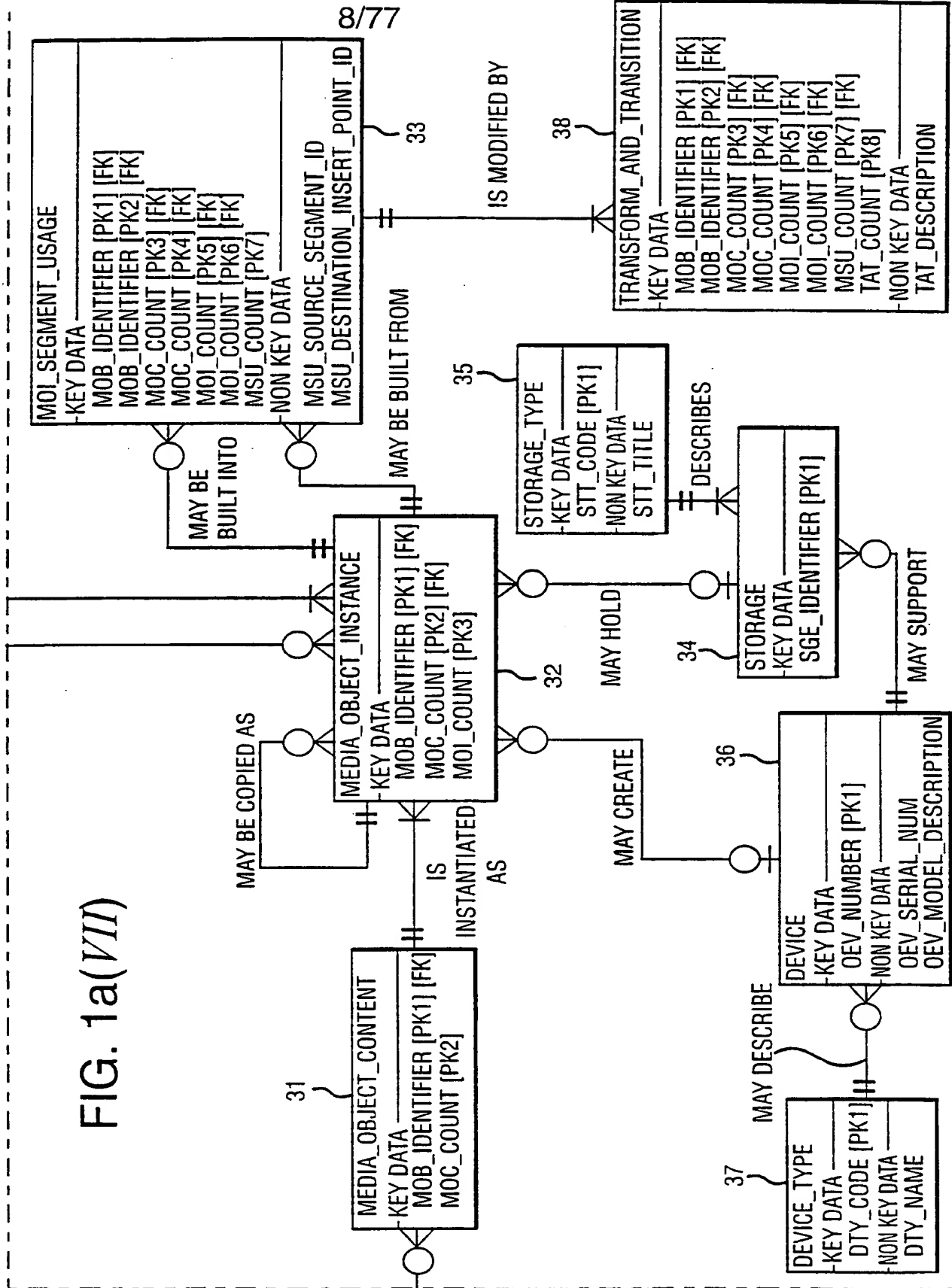
FIG. 1a(V)



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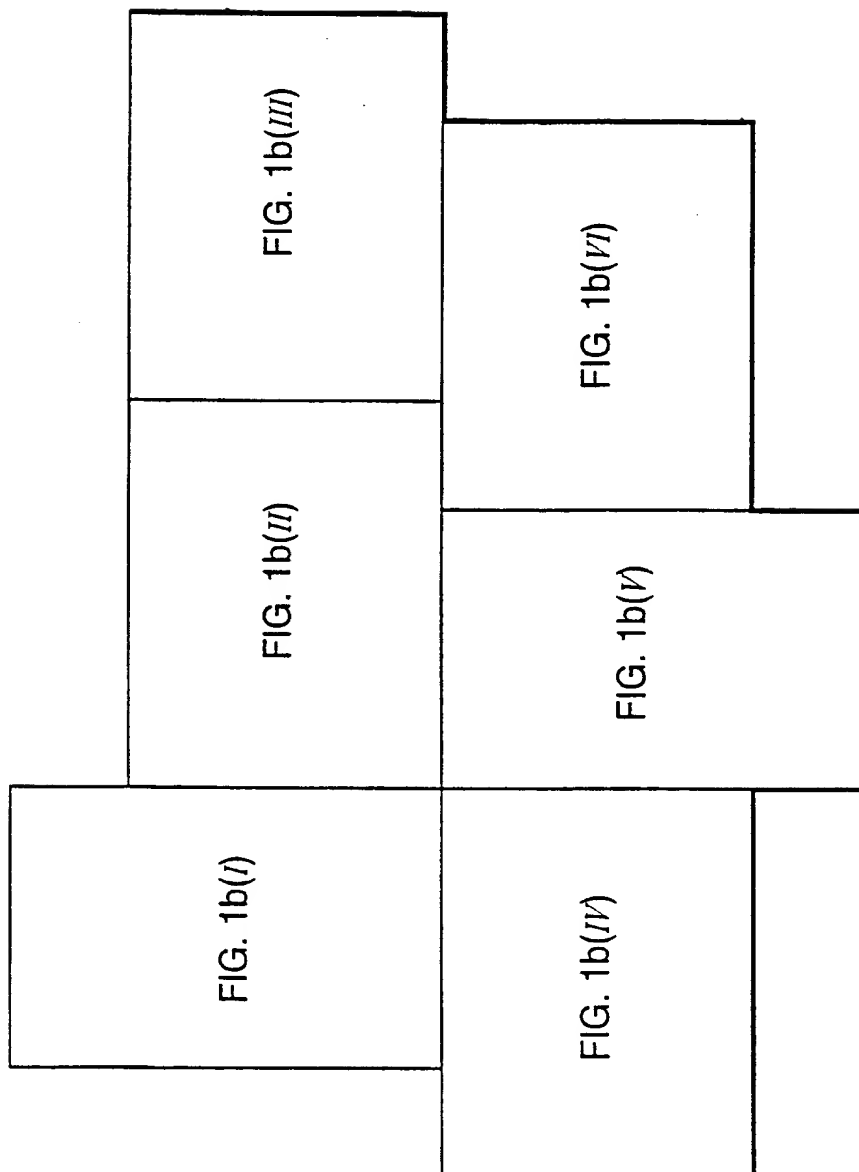
FIG. 1a(V)





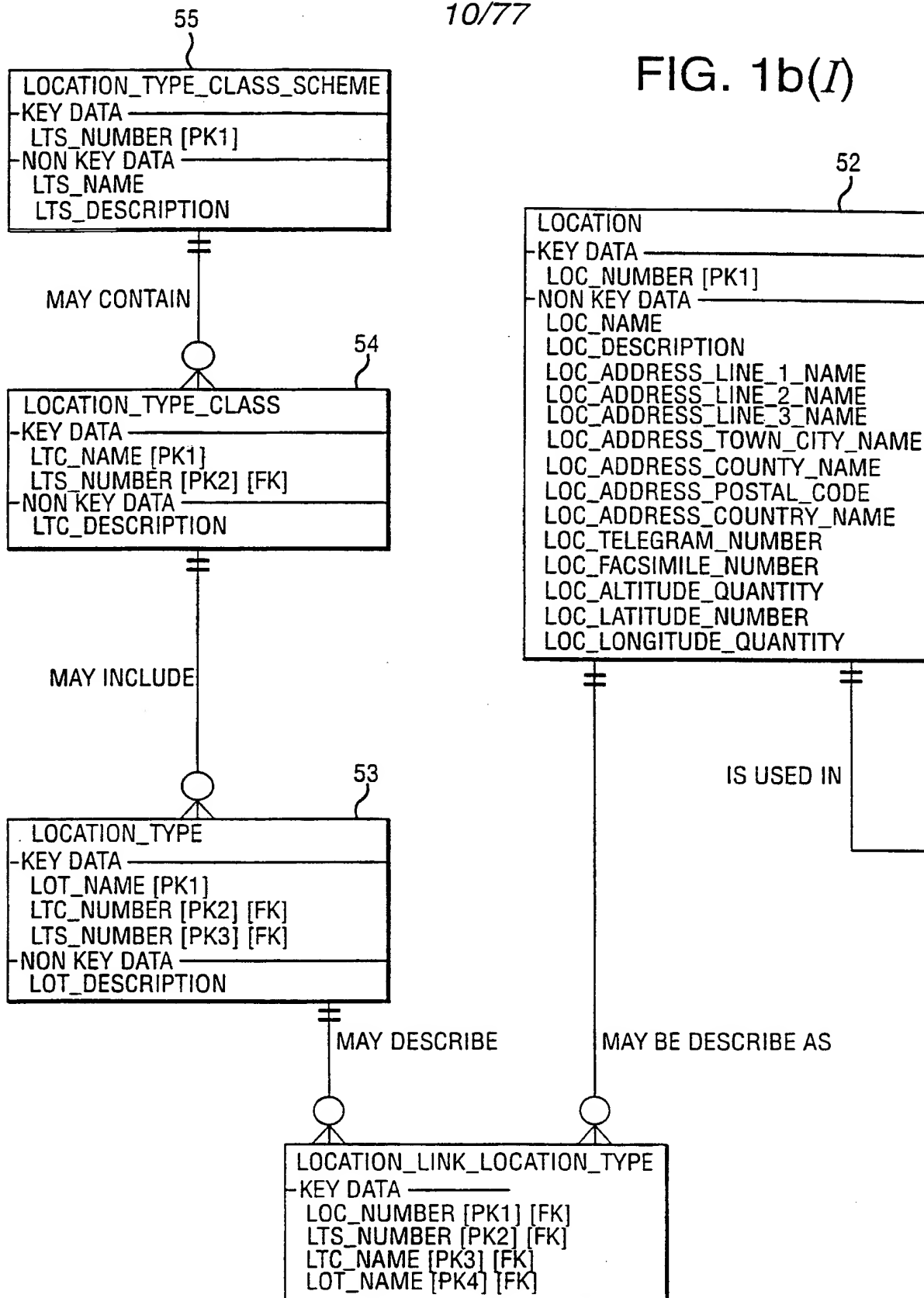
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FIG. 1b



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FIG. 1b(I)



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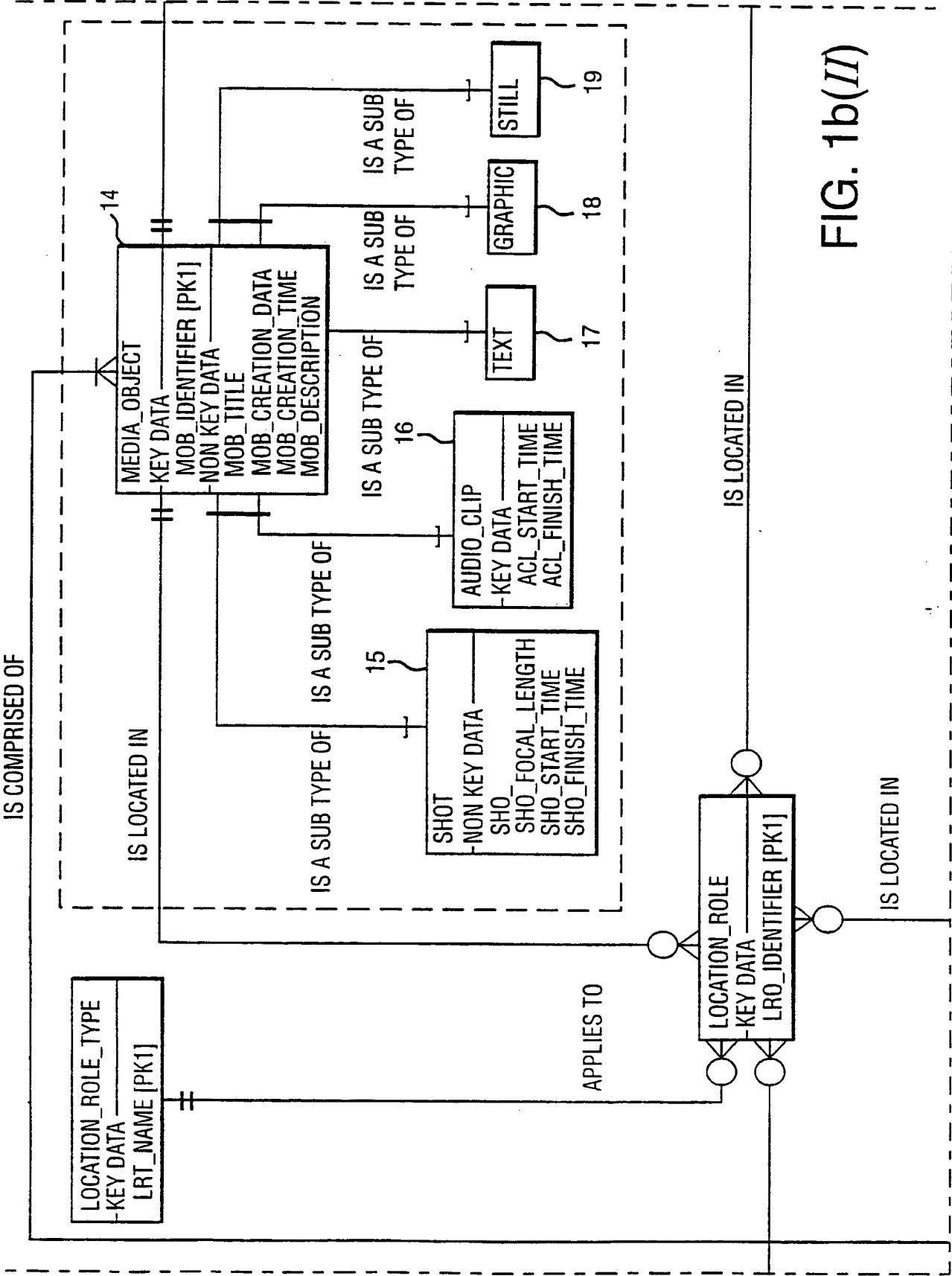
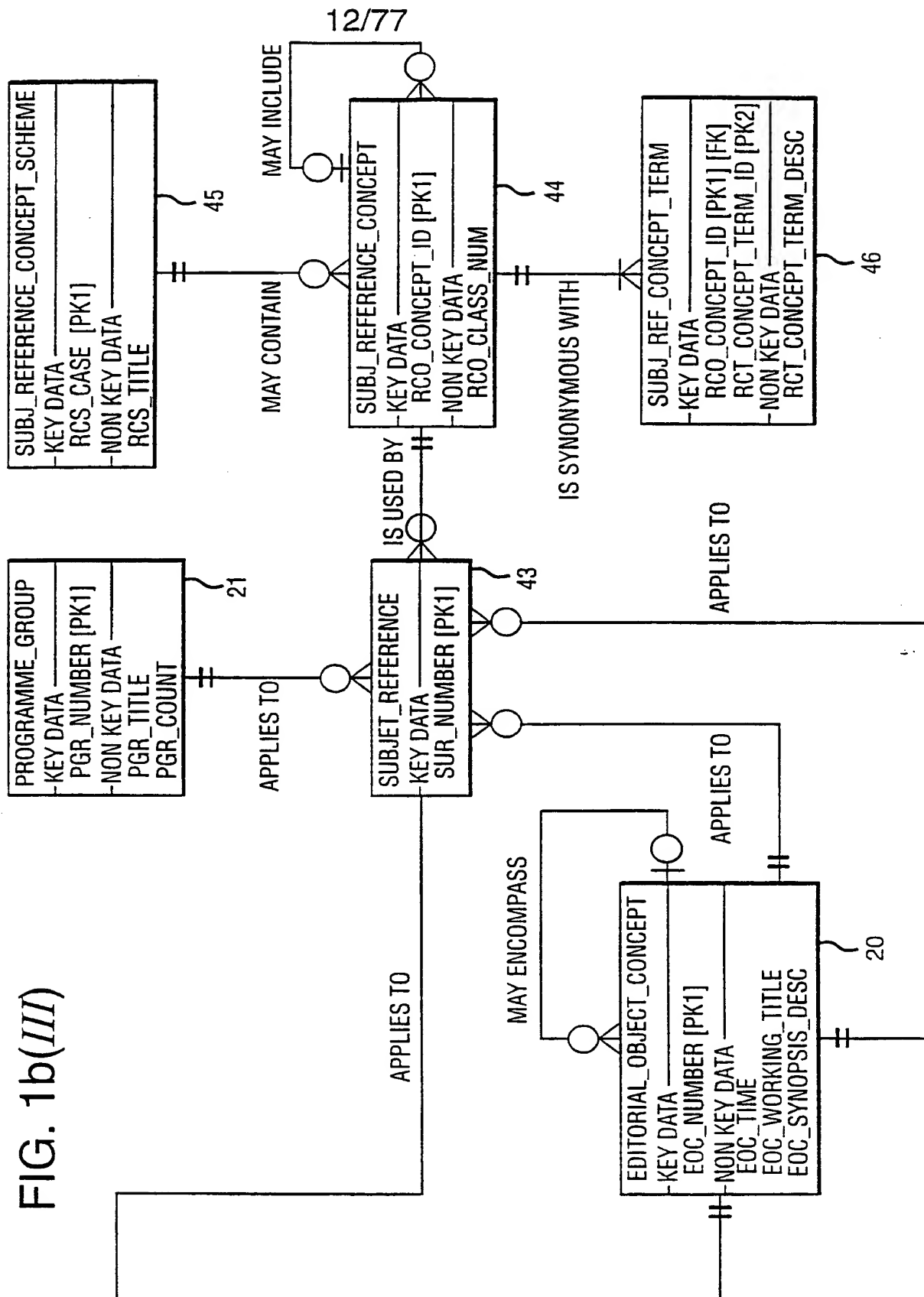


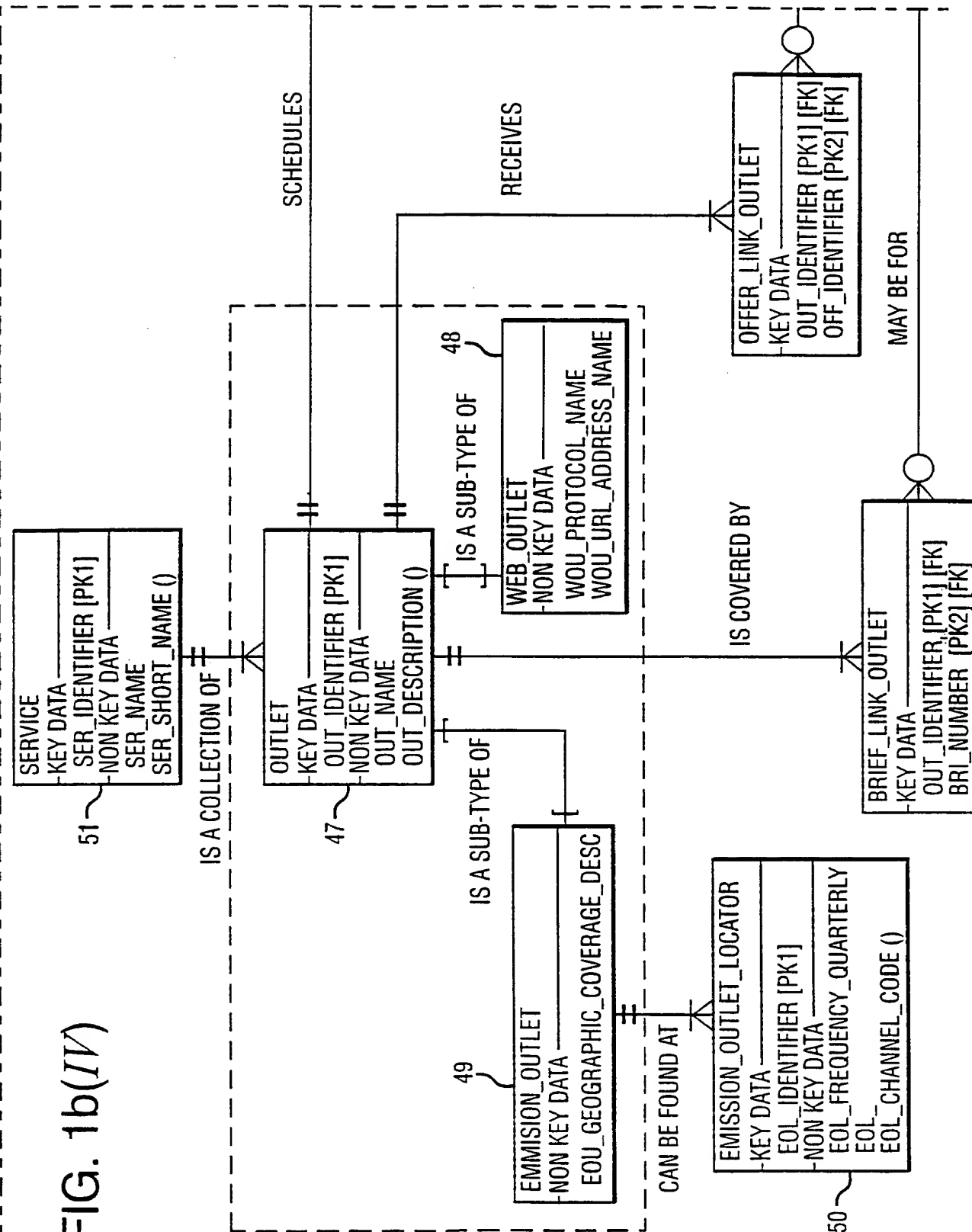
FIG. 1b(II)

FIG. 1b(III)

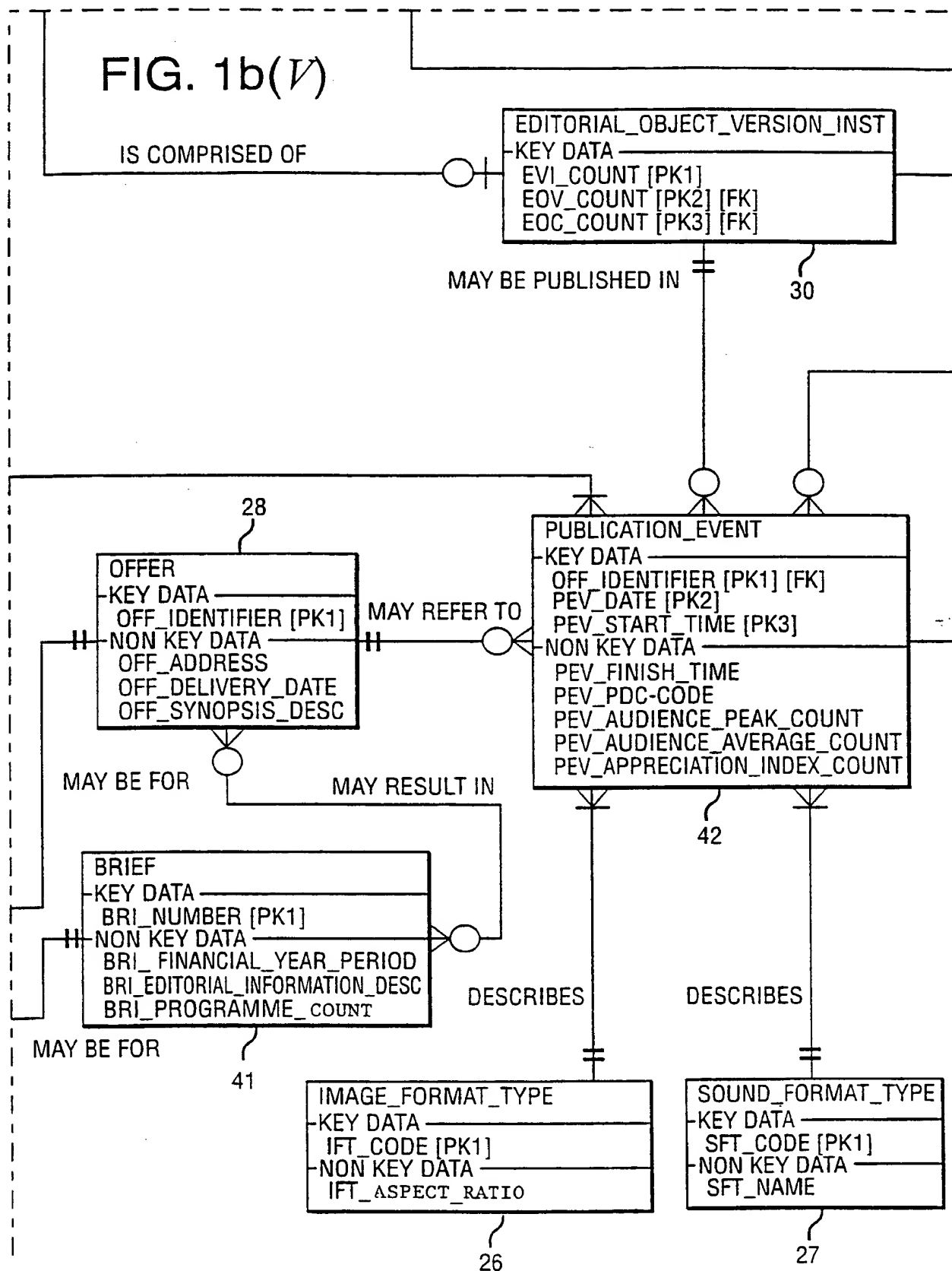


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FIG. 1b(IV)



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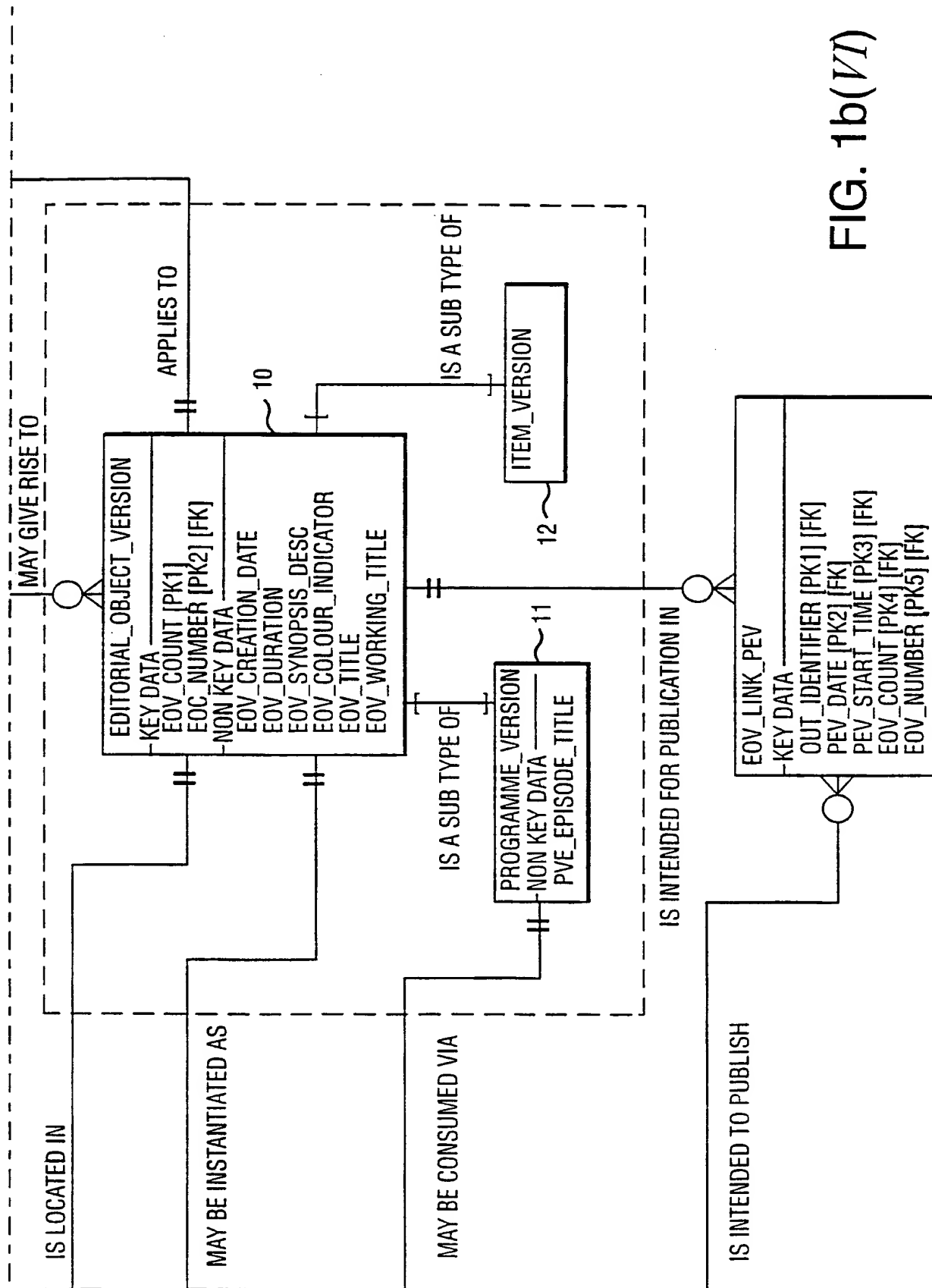
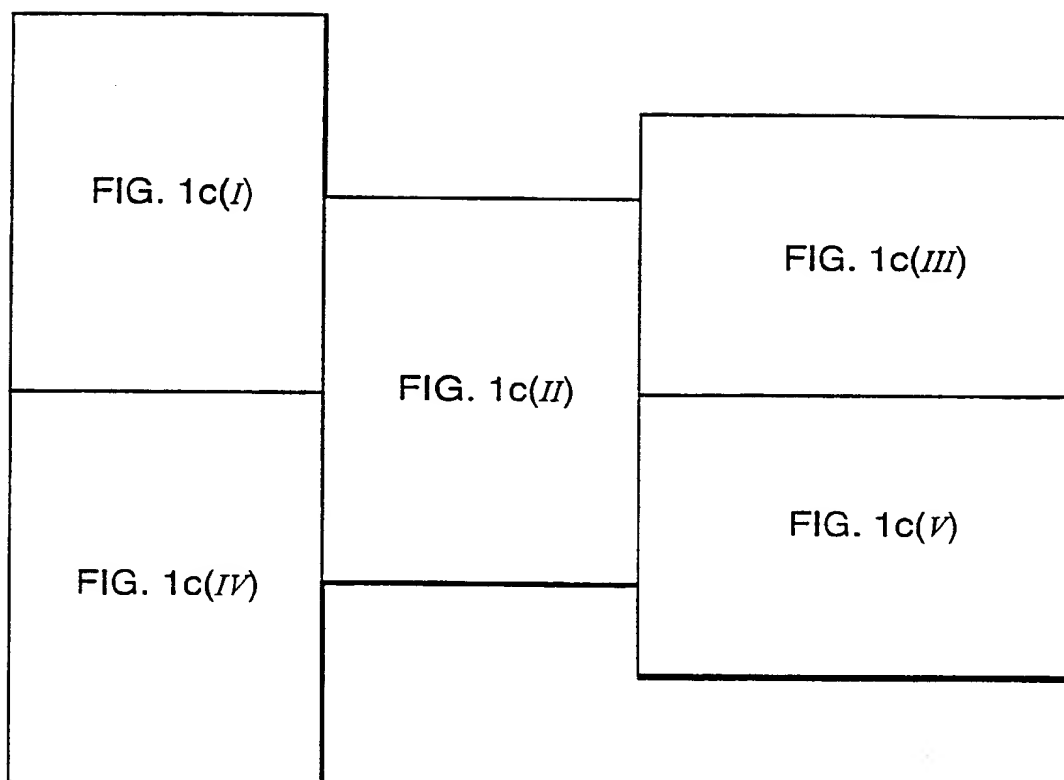


FIG. 1b(VI)

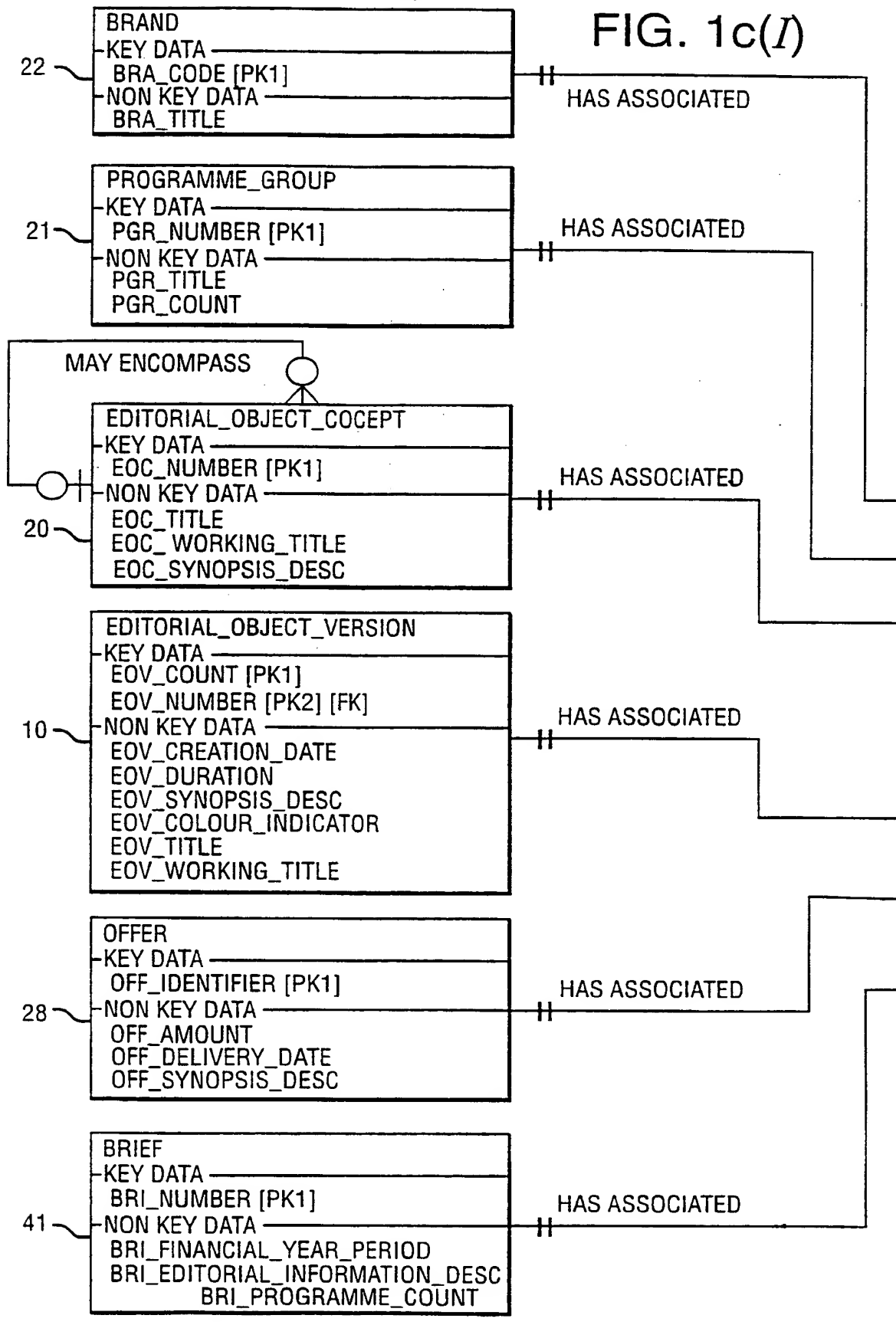
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FIG. 1c



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FIG. 1c(I)



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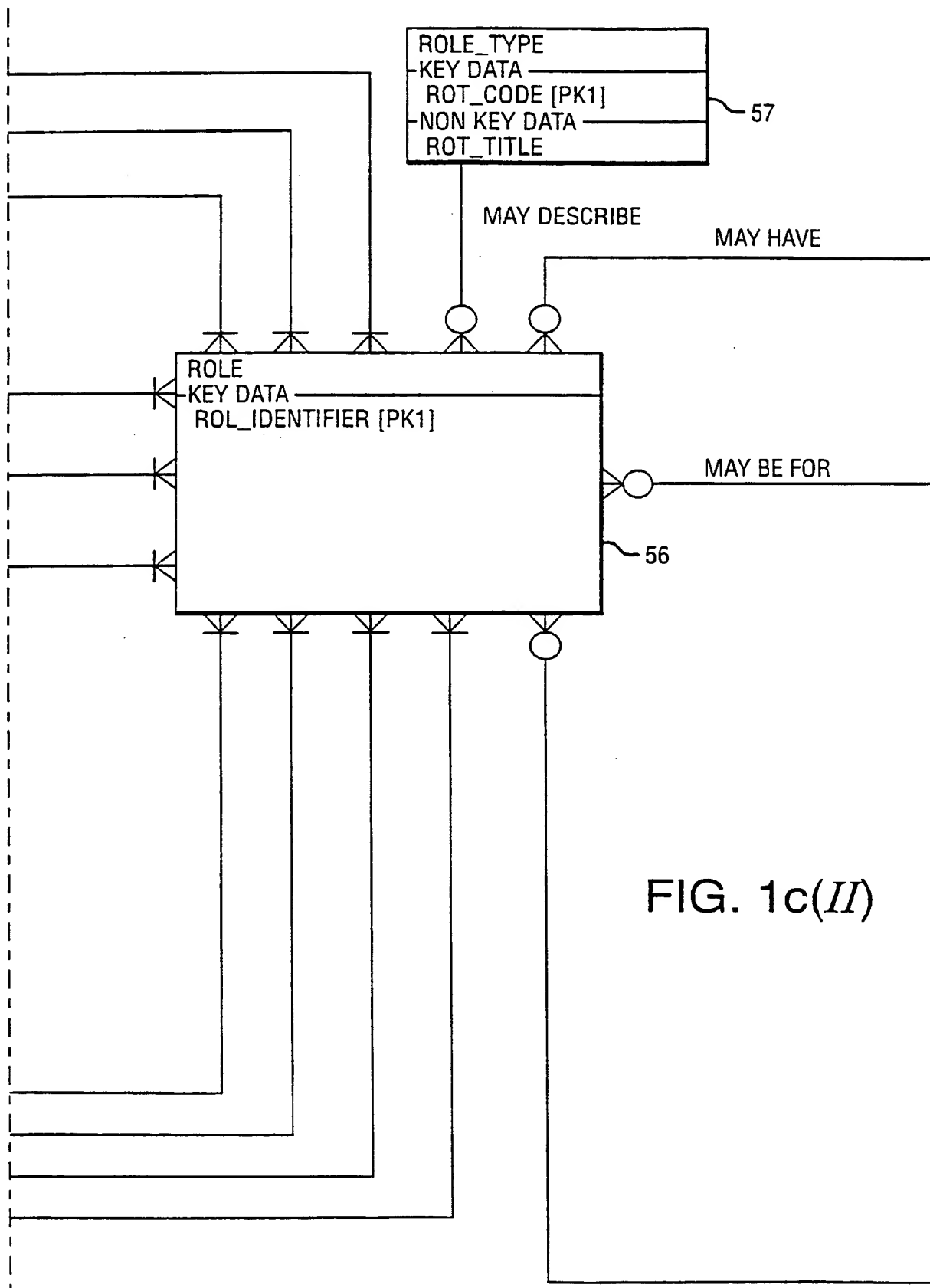
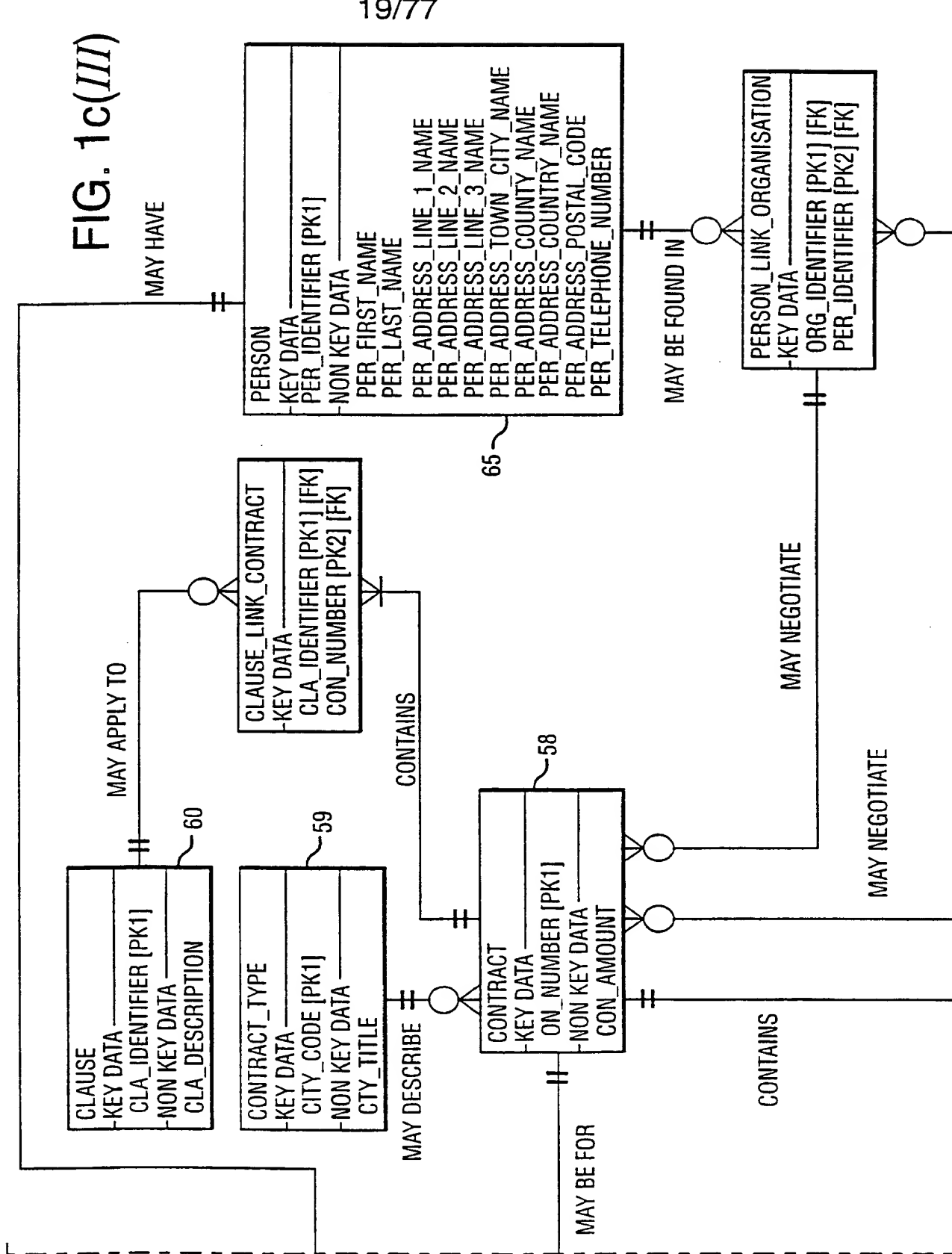


FIG. 1c(II)

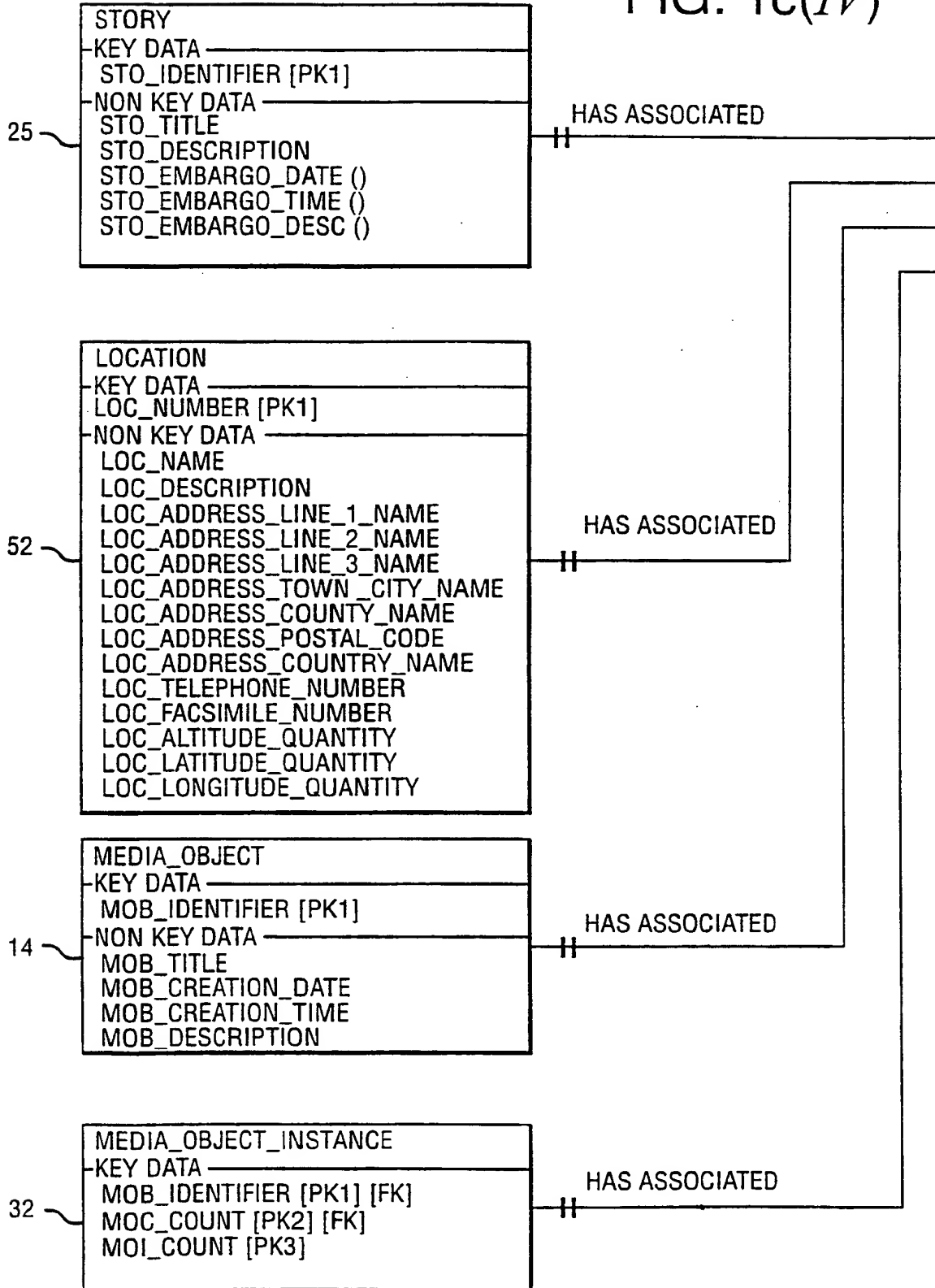
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FIG. 1c(III)



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FIG. 1c(IV)



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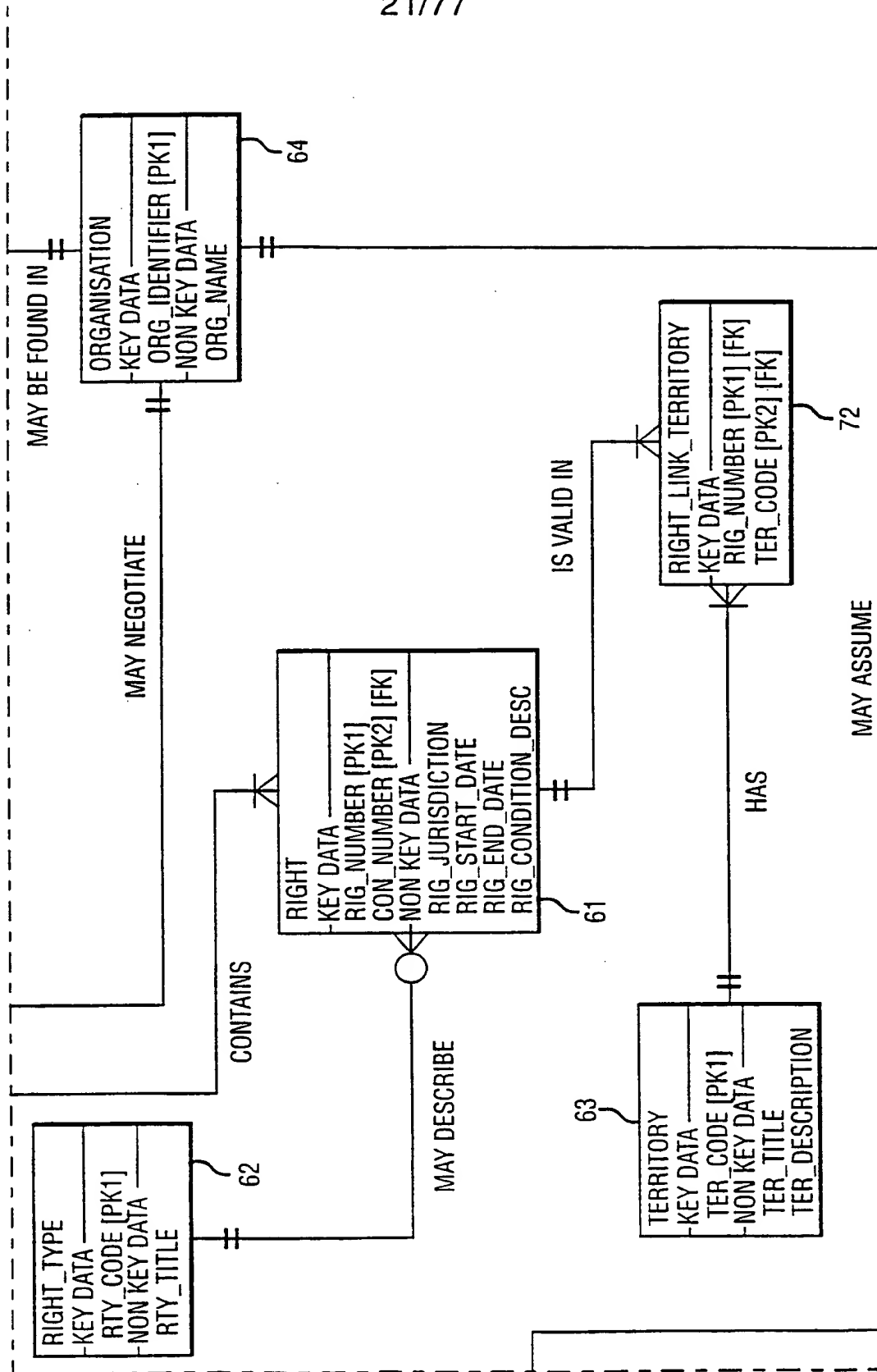


FIG. 1c(V)

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FIG. 2(i)	FIG. 2(ii)	FIG. 2(iii)	FIG. 2(iv)	FIG. 2(v)	FIG. 2(vi)	FIG. 2
FIG. 2(vii)	FIG. 2(viii)		FIG. 2(ix)	FIG. 2(x)	FIG. 2(xi)	

FIG. 2(I)

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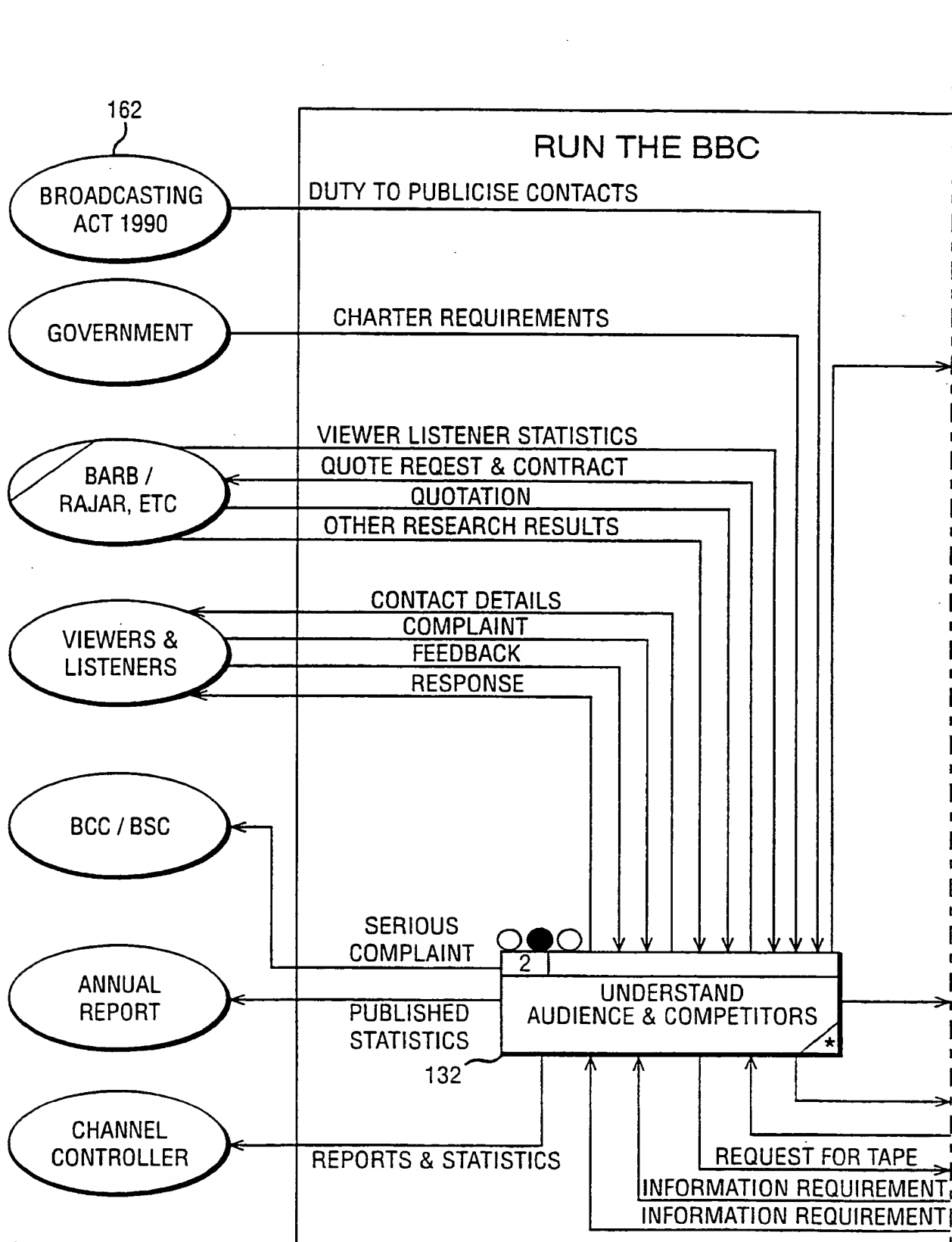
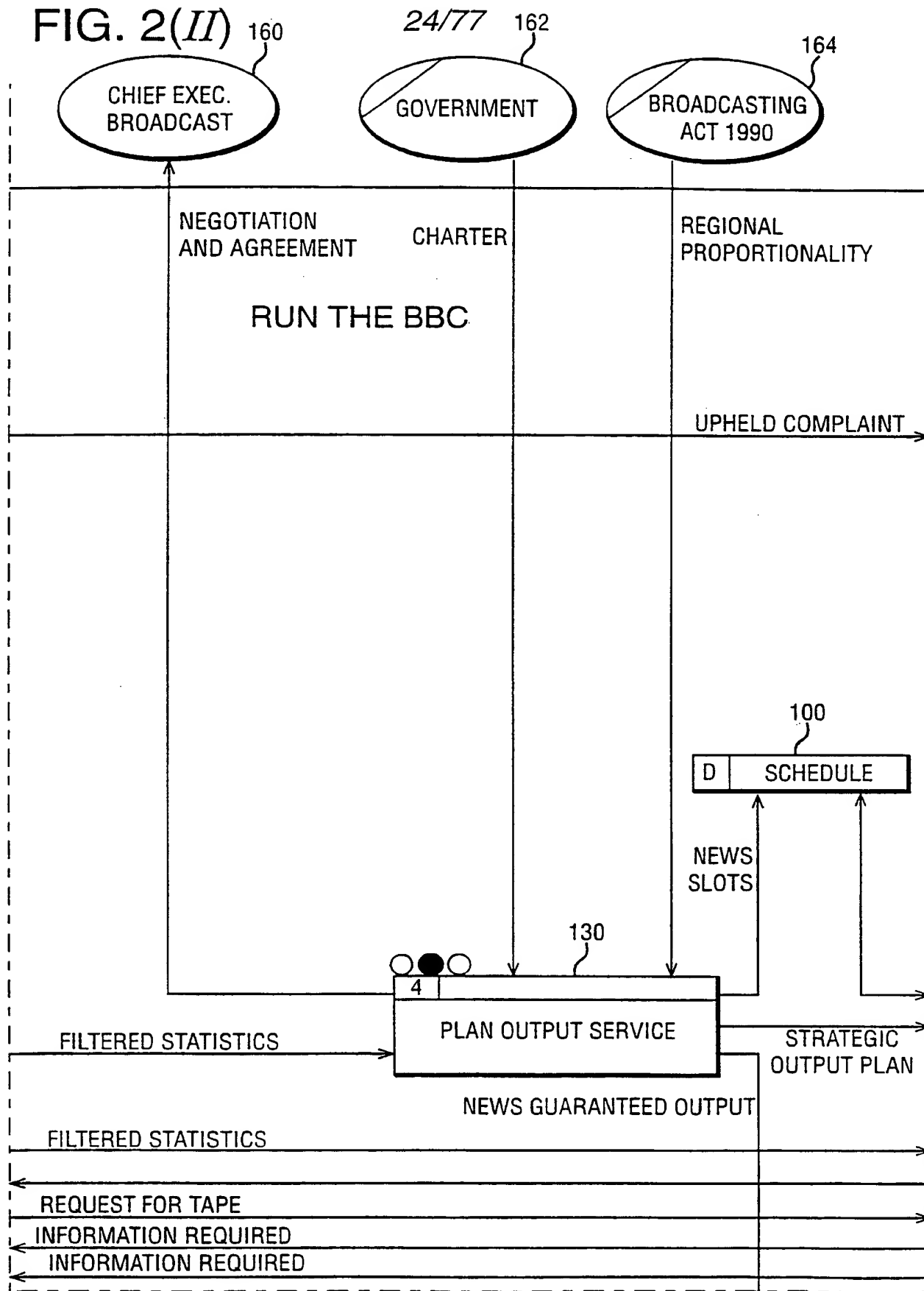


FIG. 2(II) 160



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FIG. 2(III)

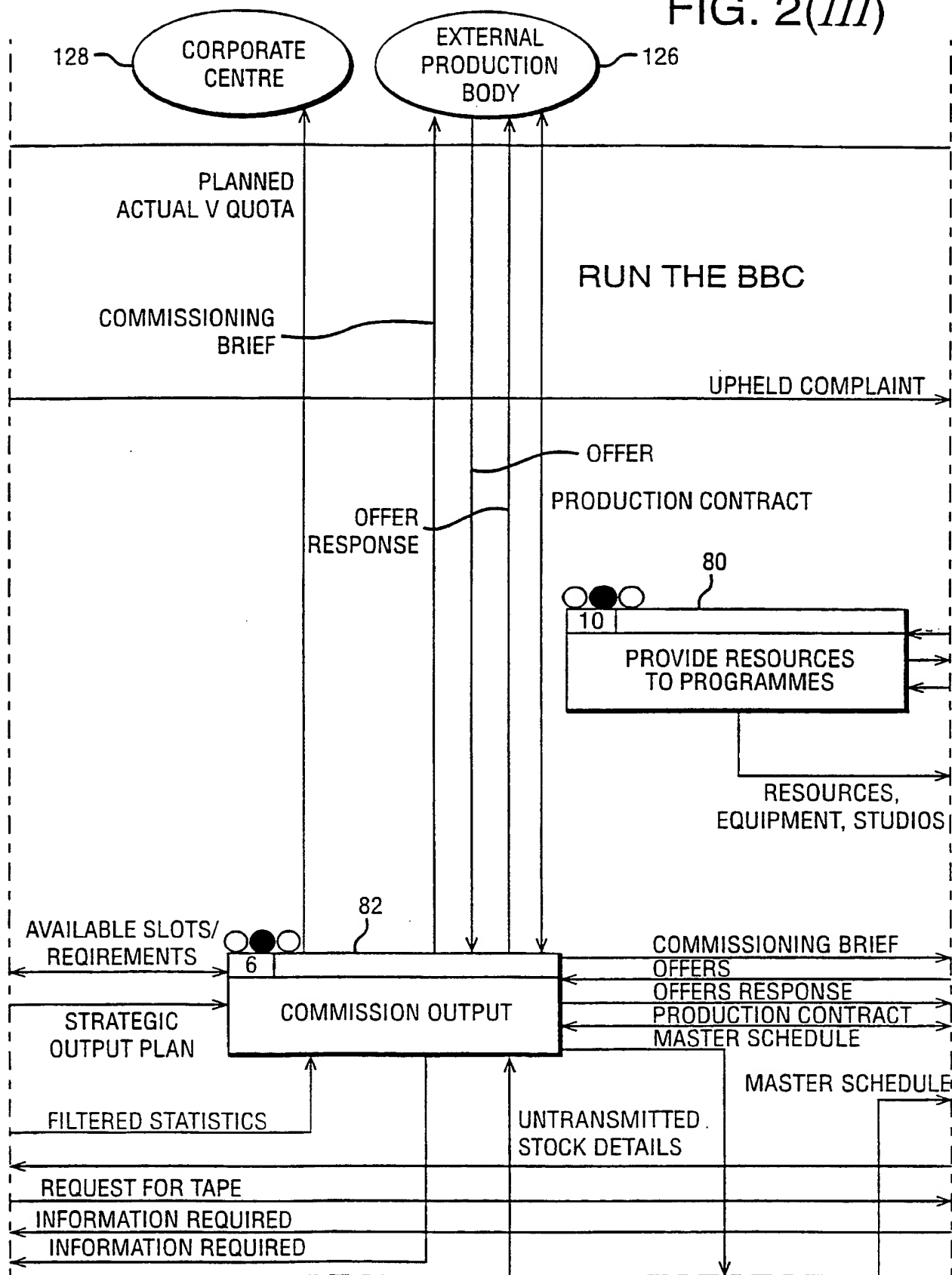


FIG. 2(IV)

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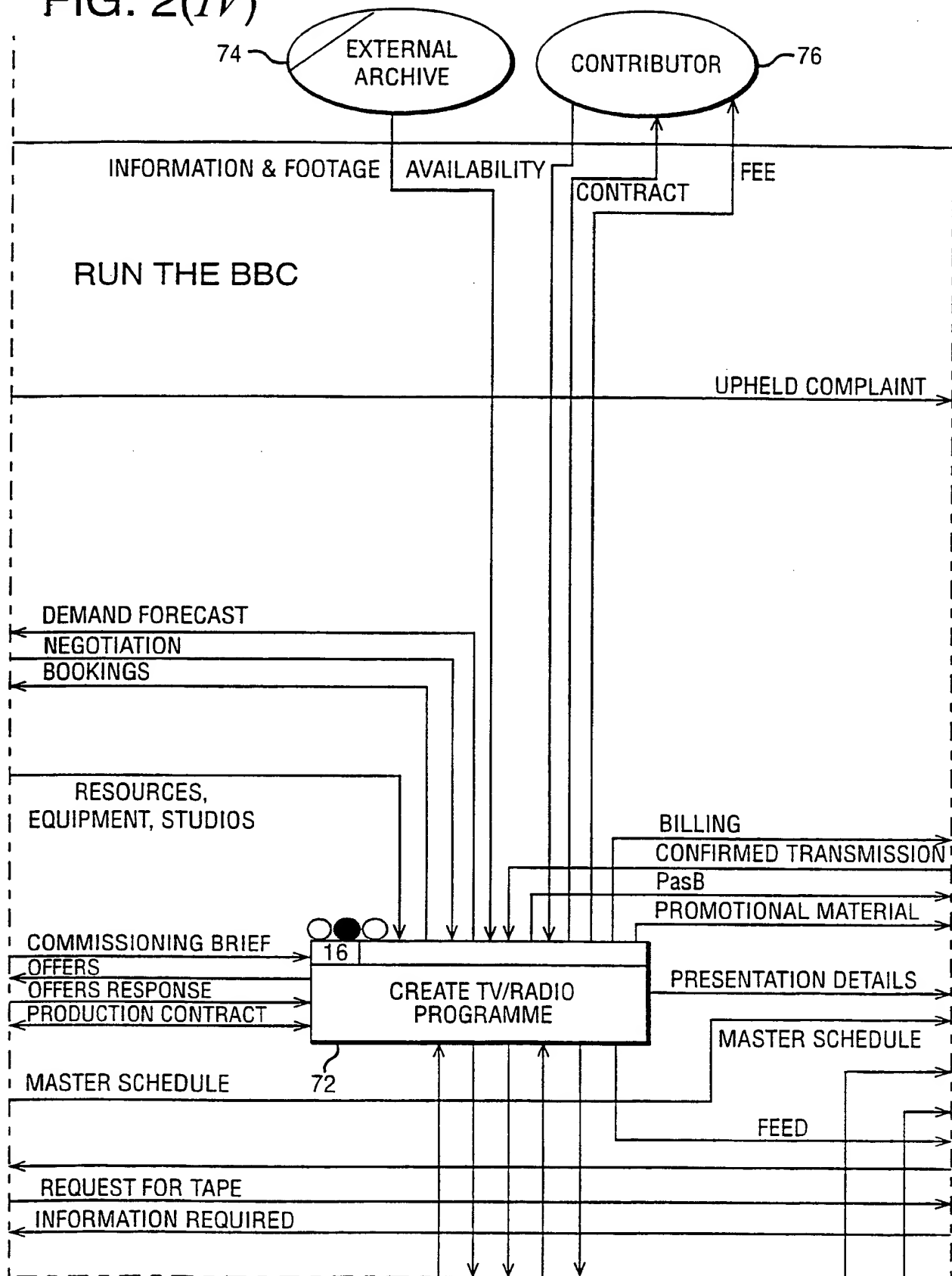
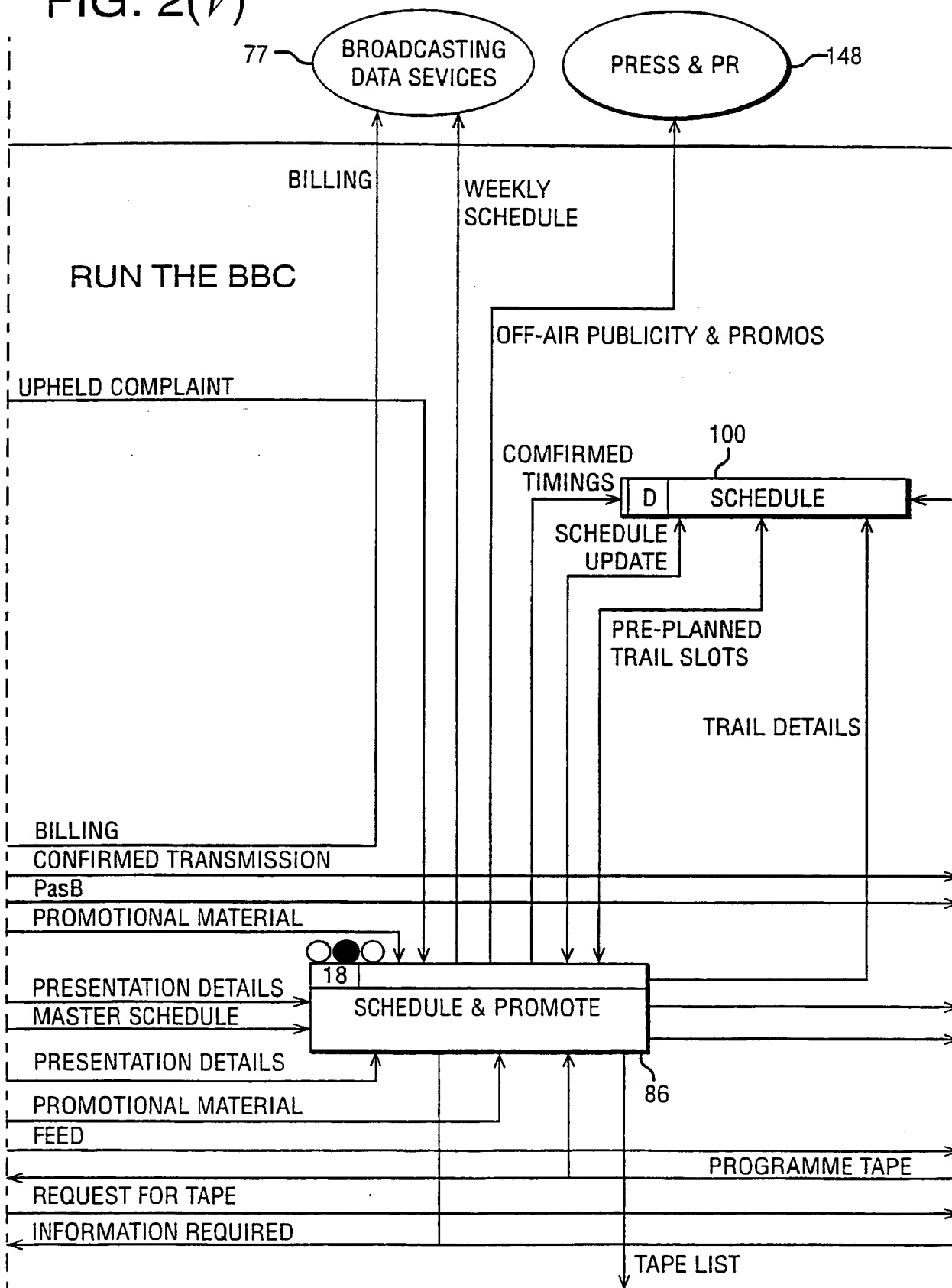


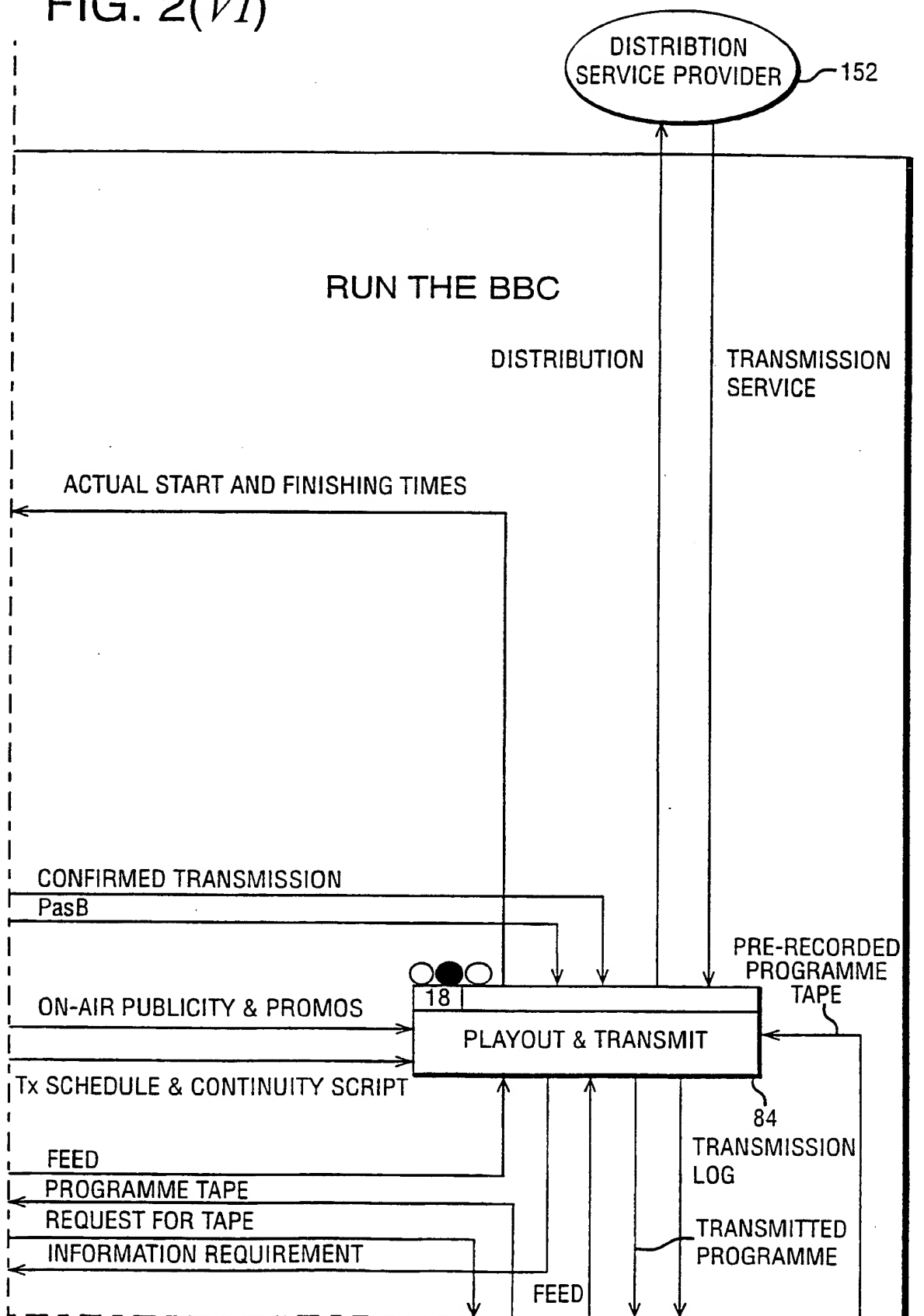
FIG. 2(V)

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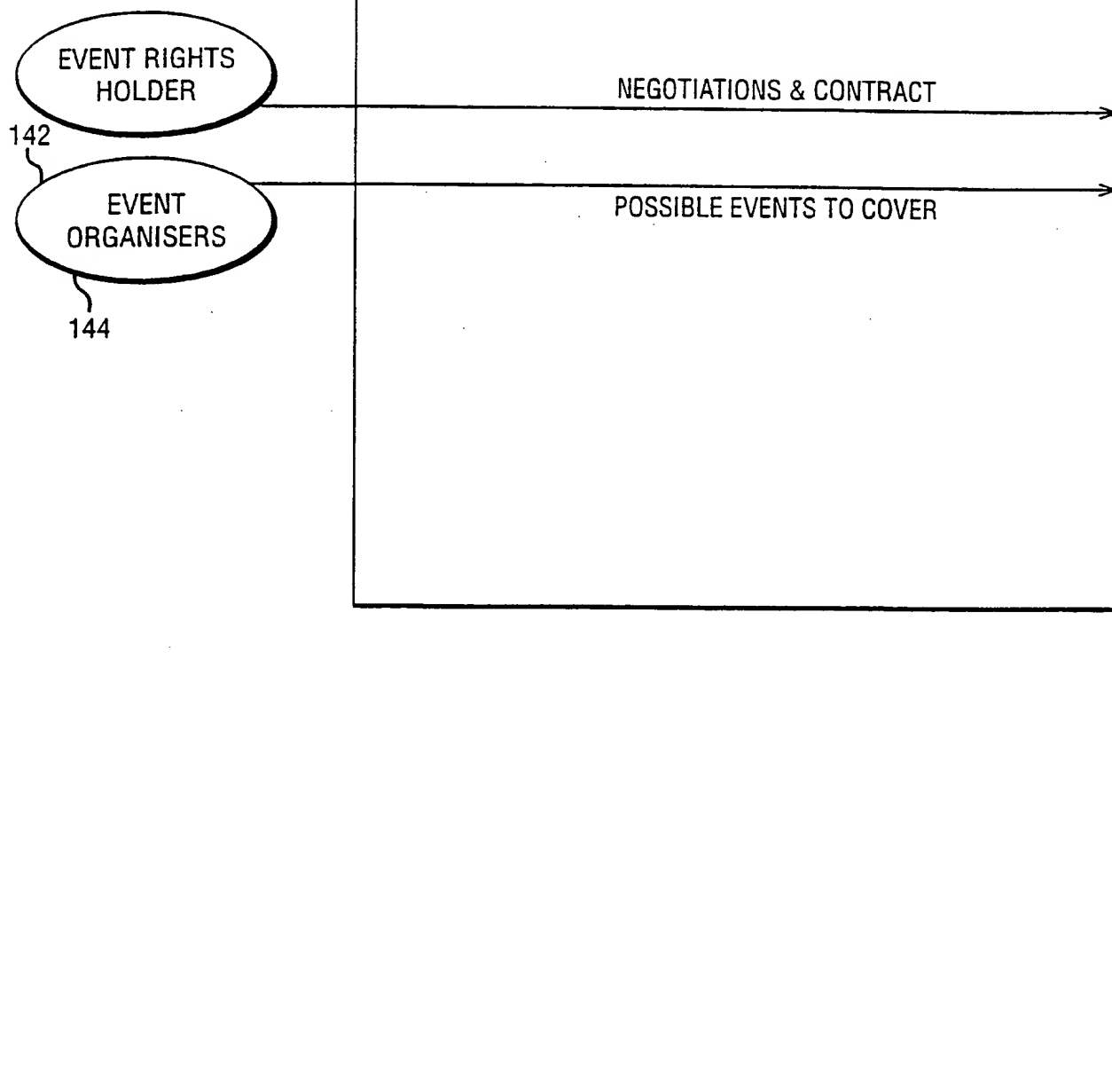
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FIG. 2(VI)



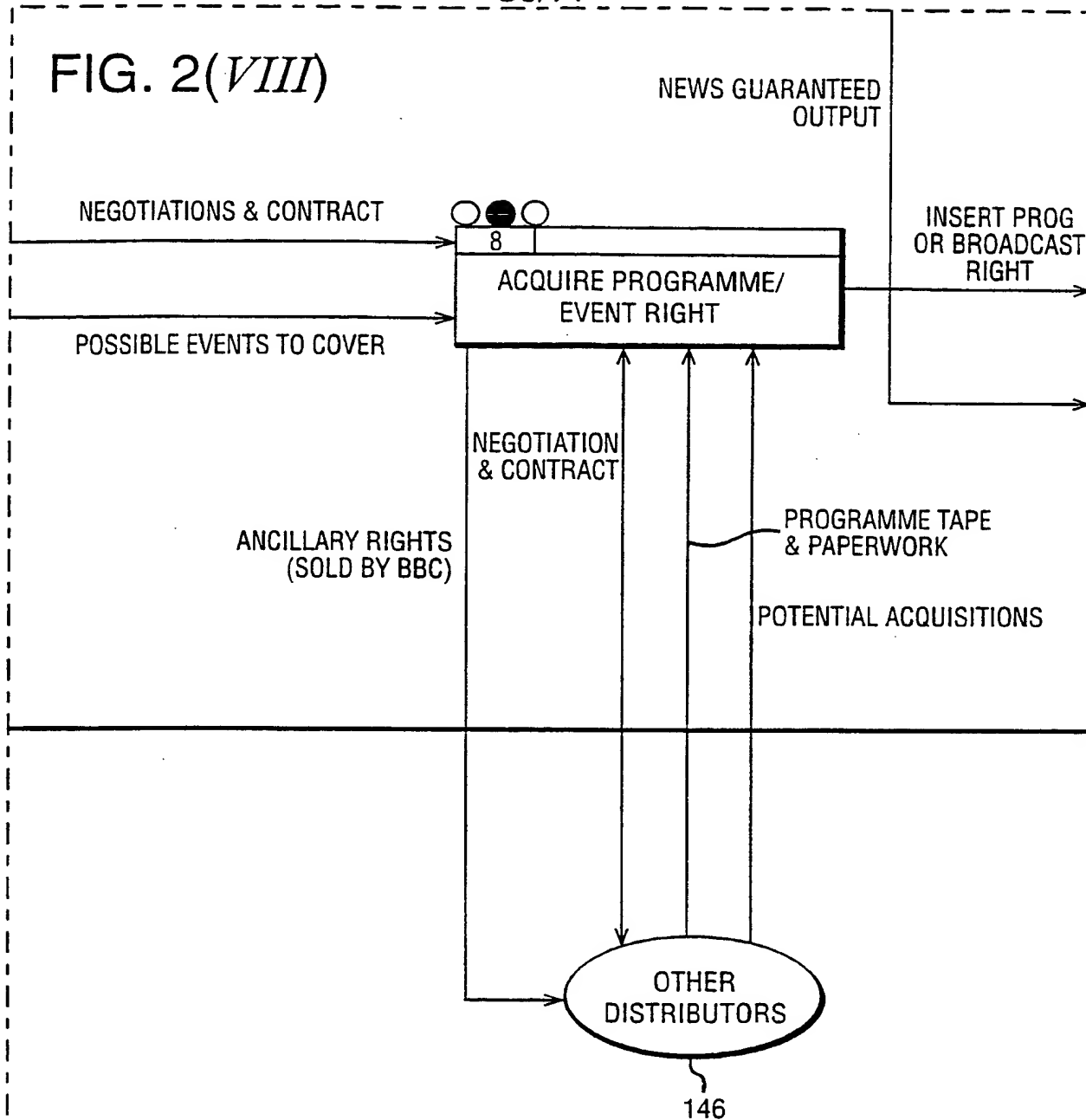
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FIG. 2(VII)

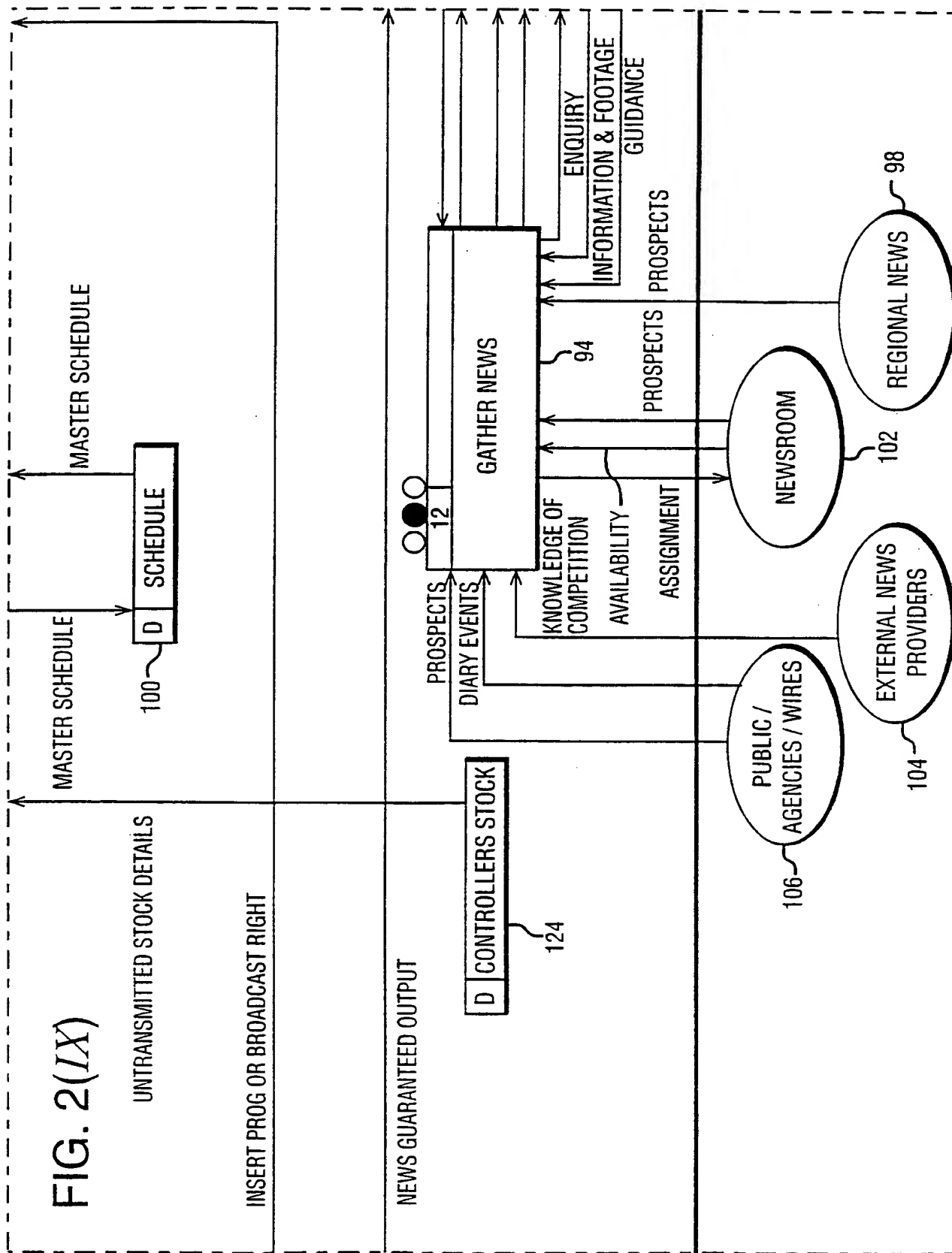


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FIG. 2(VIII)



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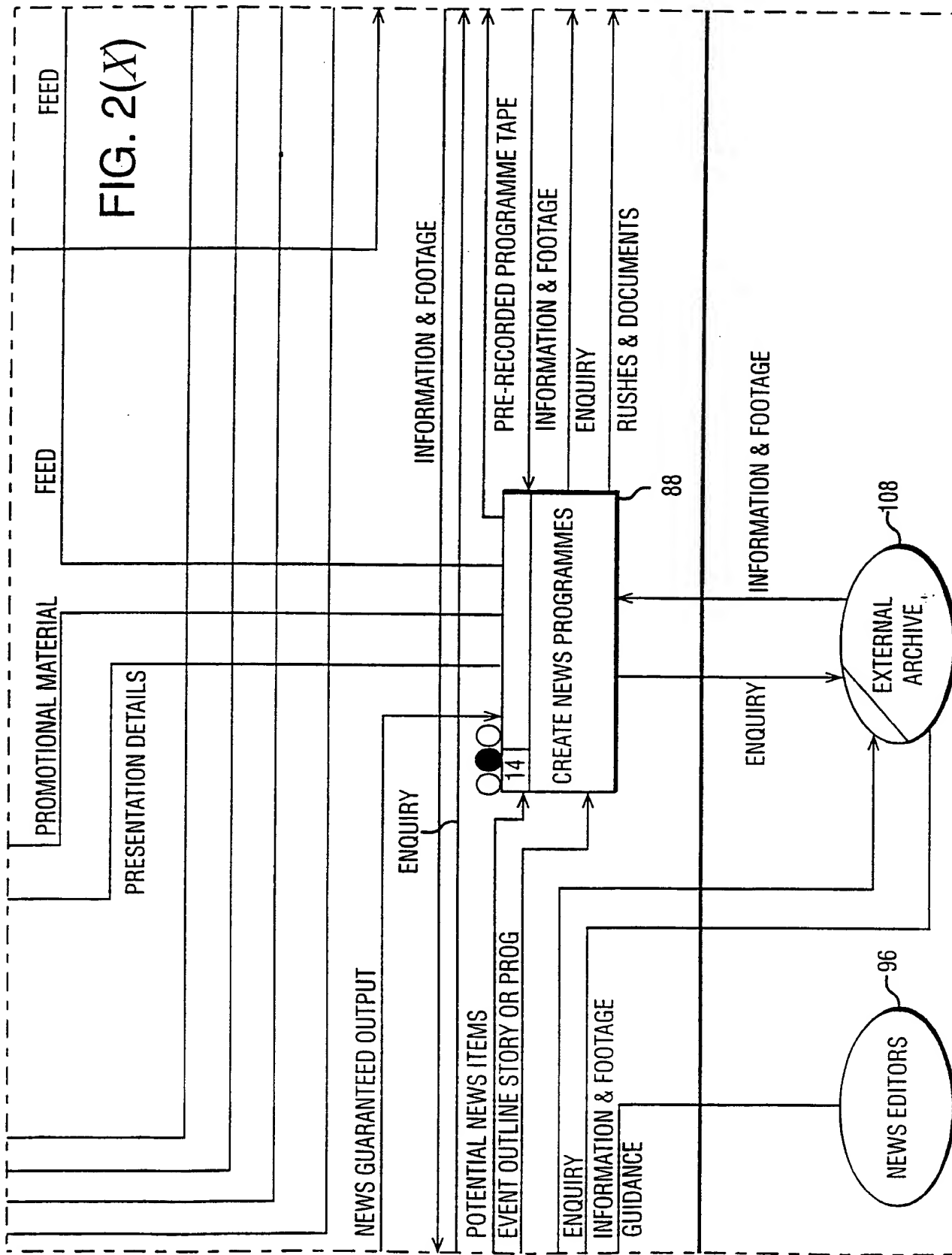


FIG. 2(XI)

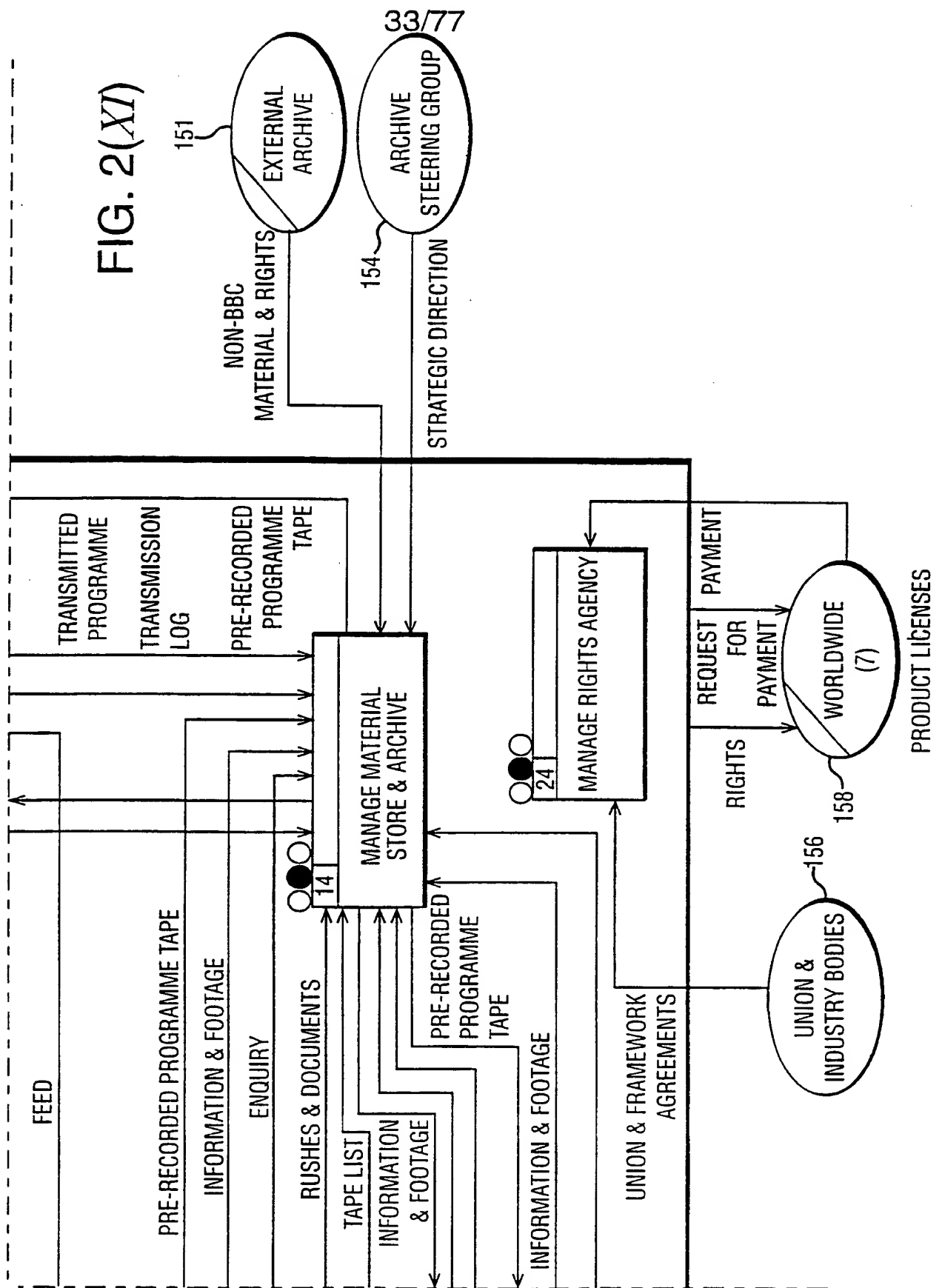


FIG. 3

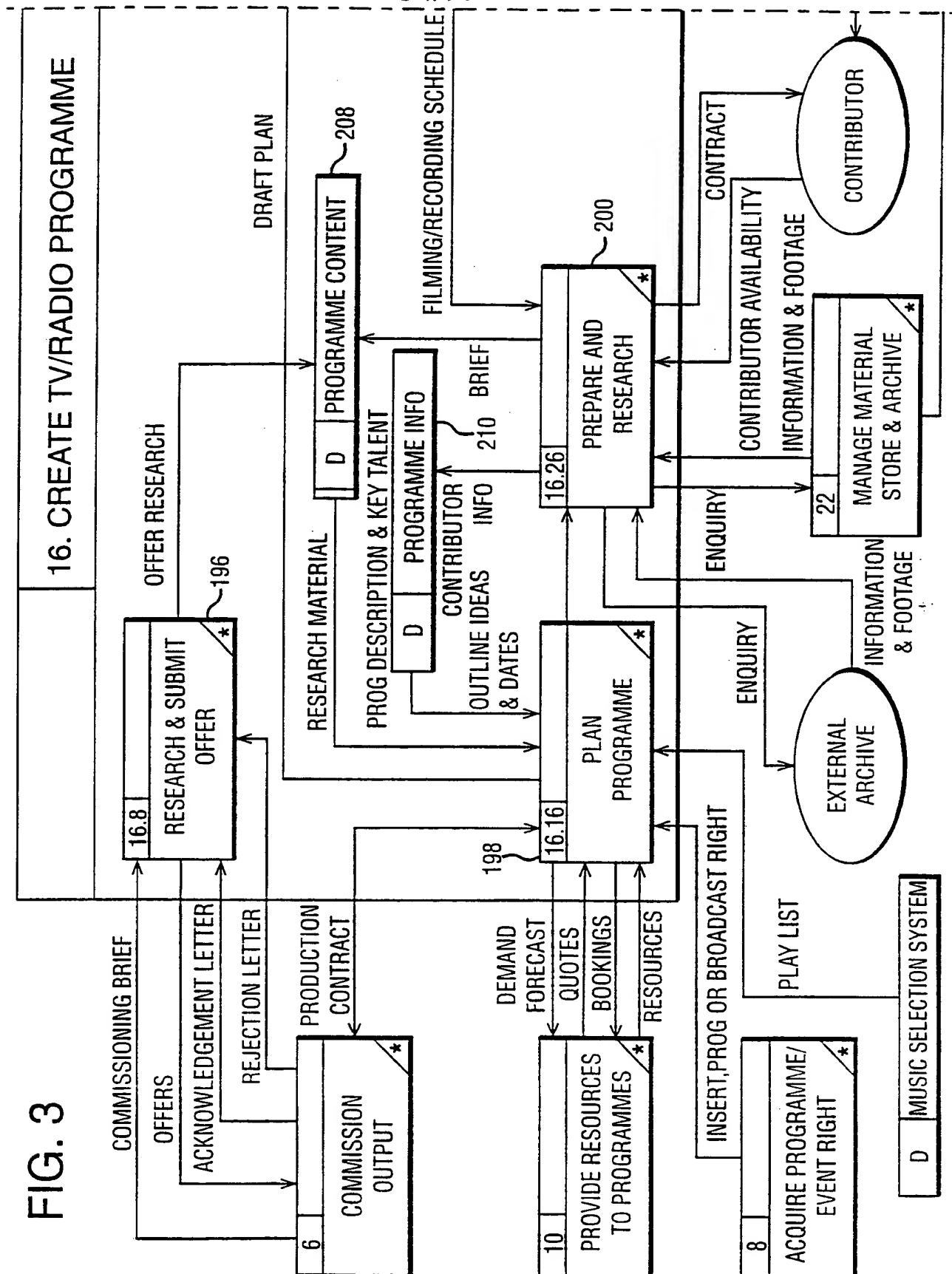
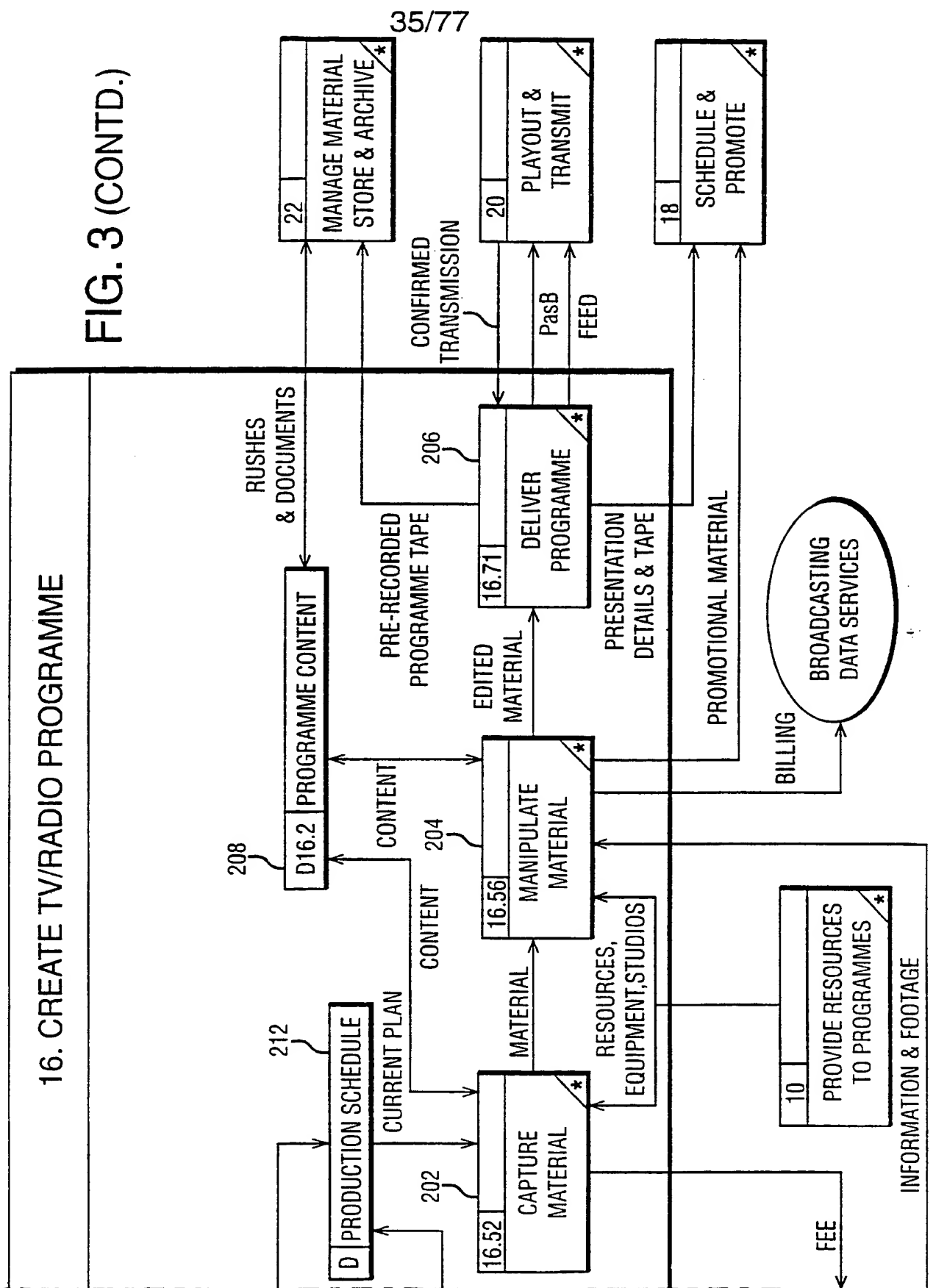


FIG. 3 (CONTD.)



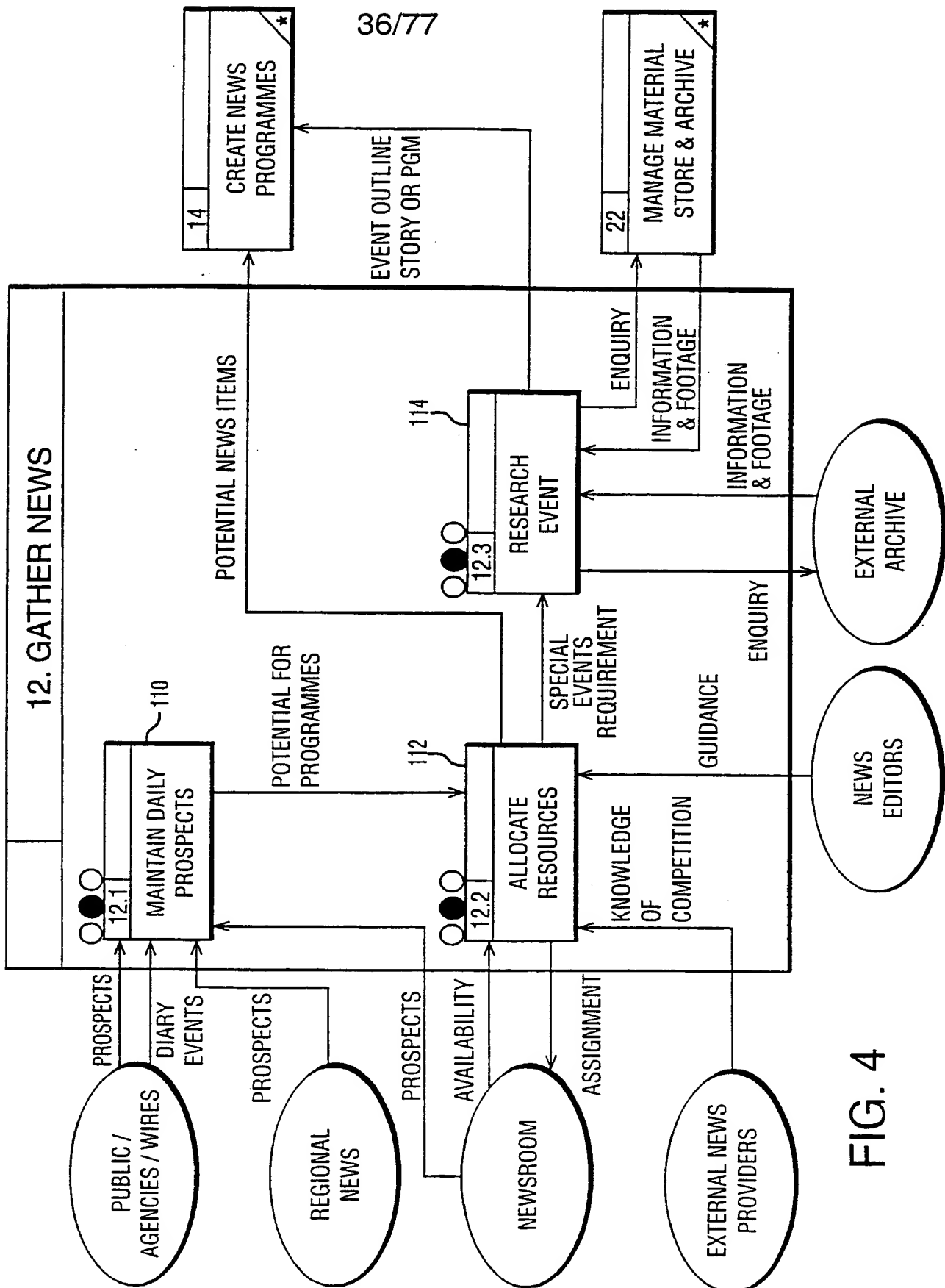
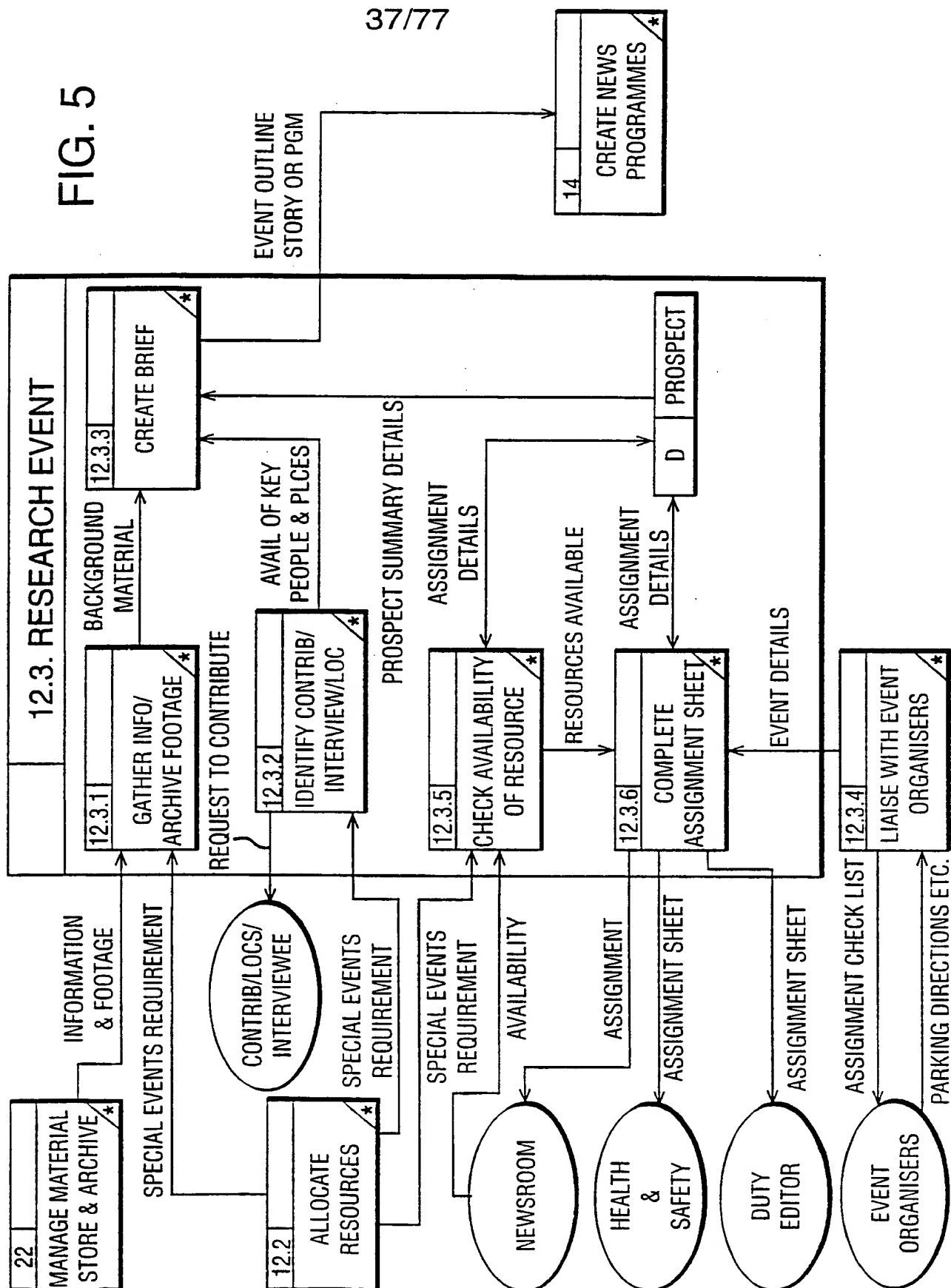


FIG. 4

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FIG. 5



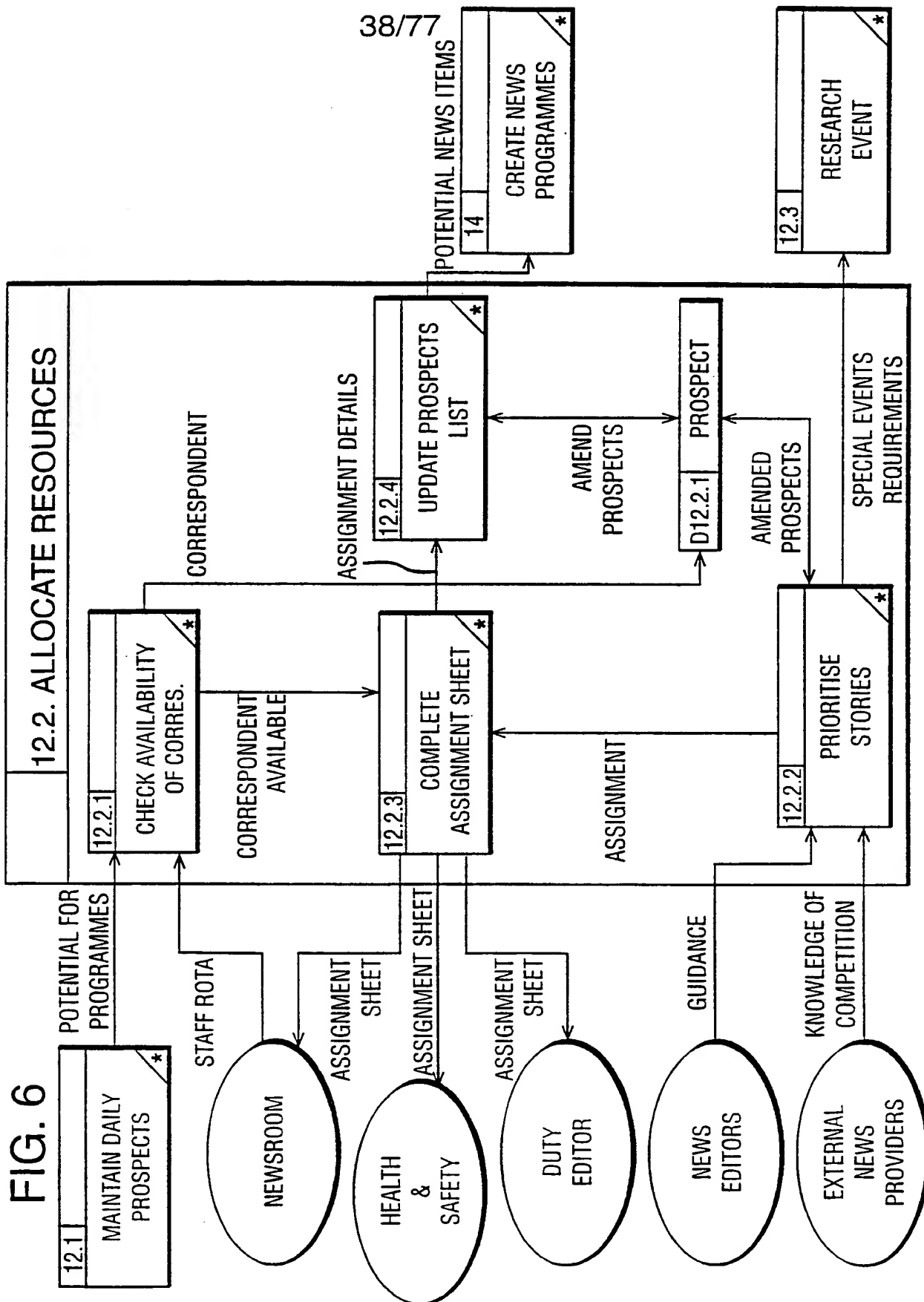
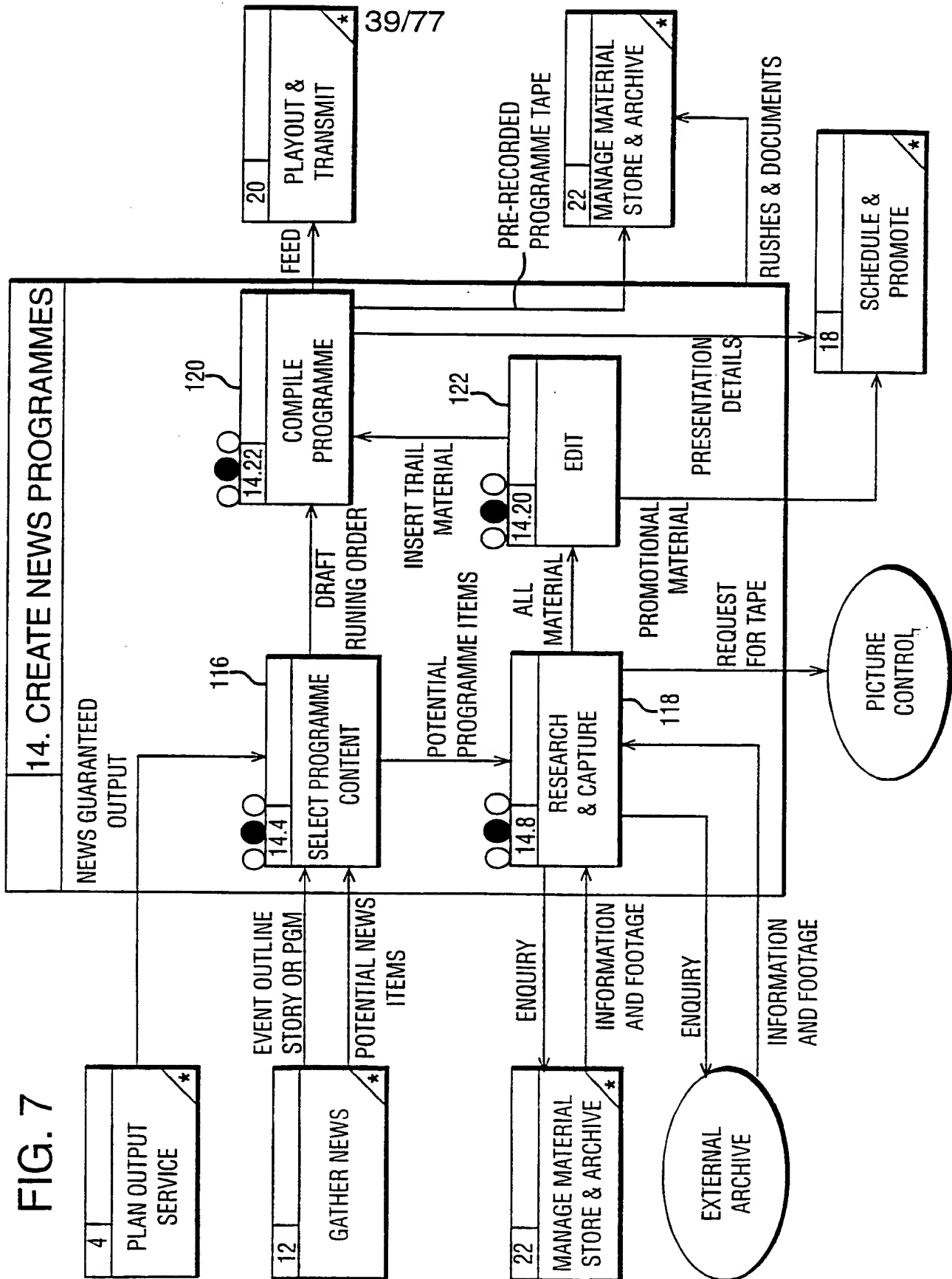


FIG. 7



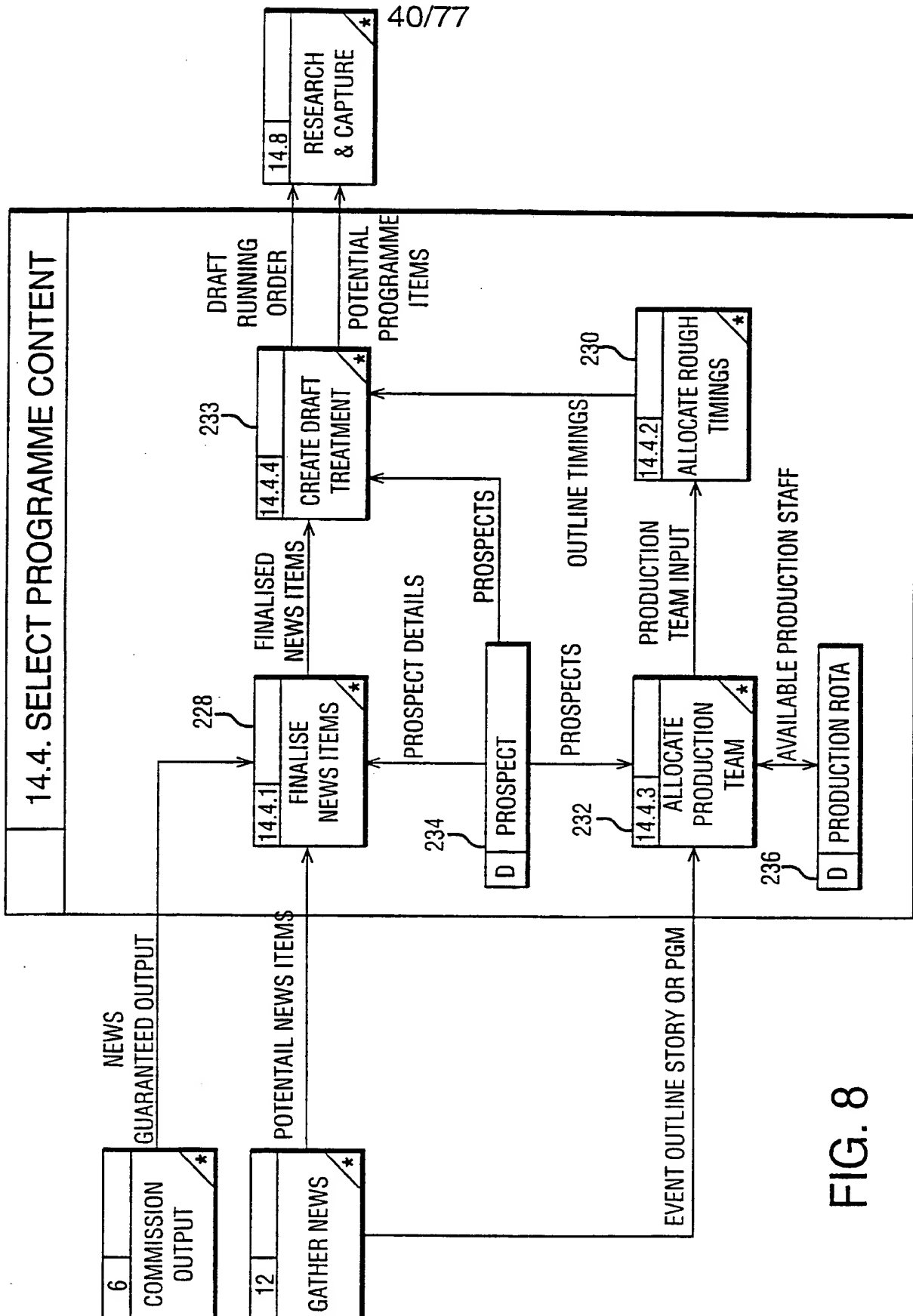
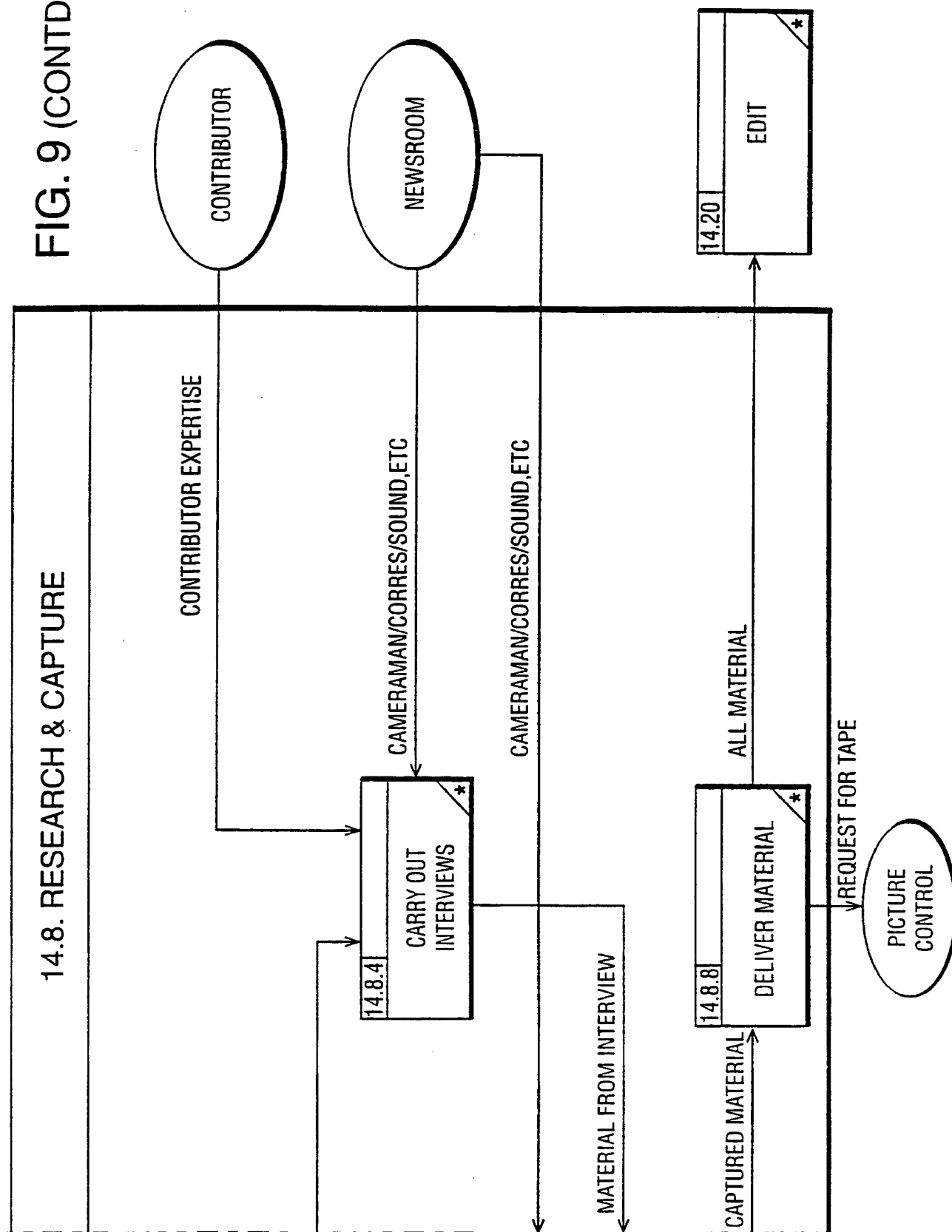


FIG. 8

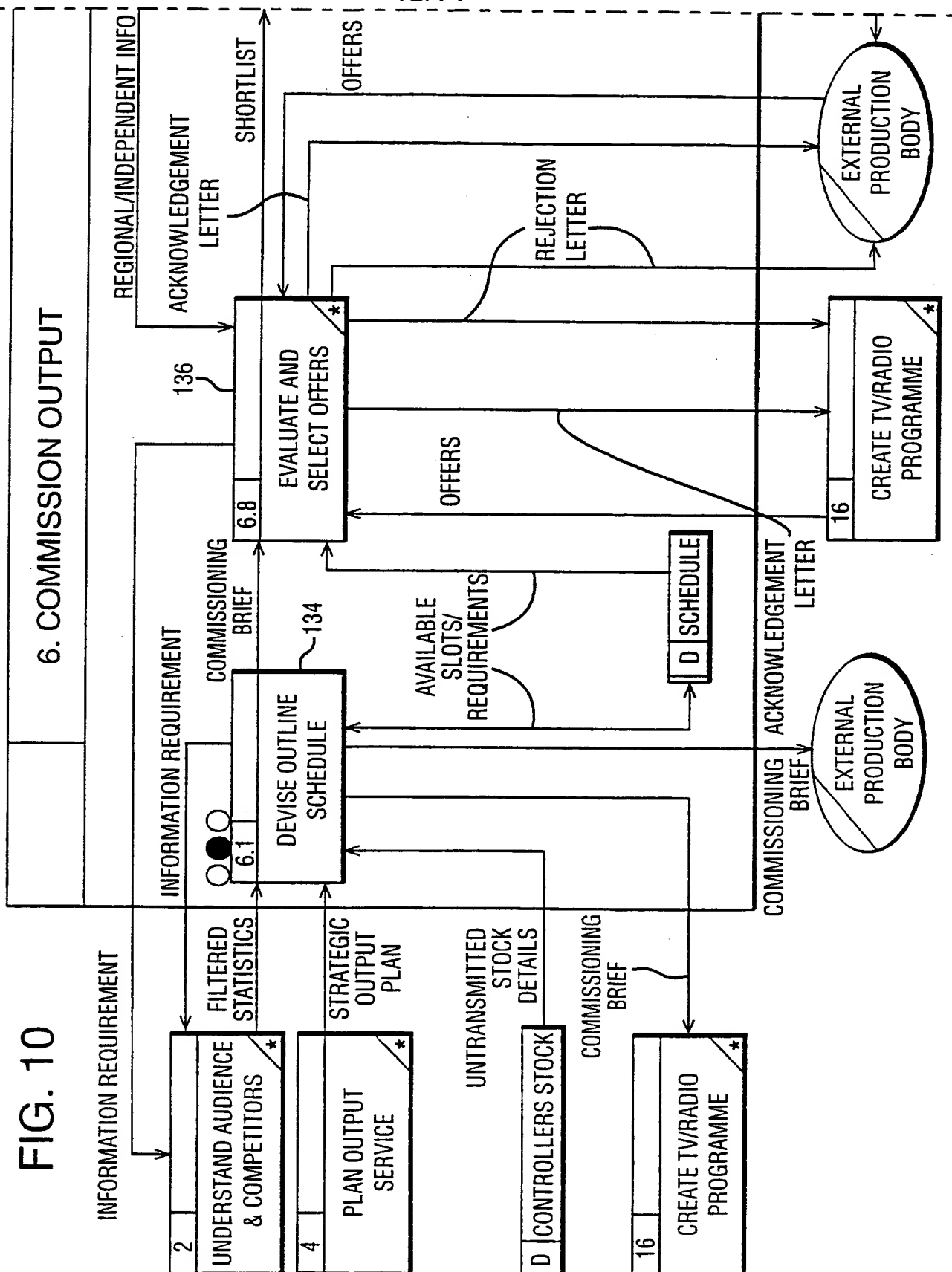
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FIG. 9 (CONTD.)



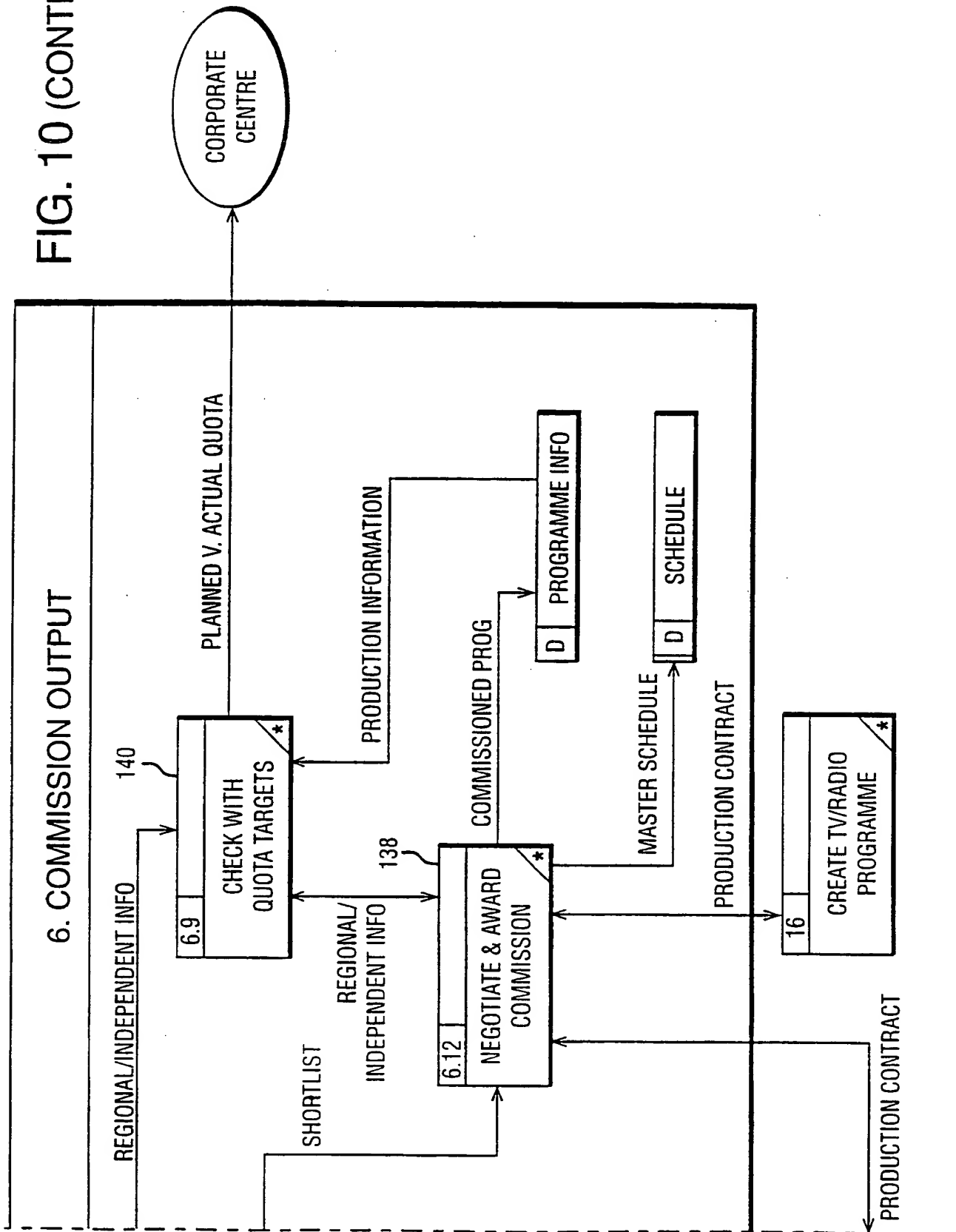
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FIG. 10



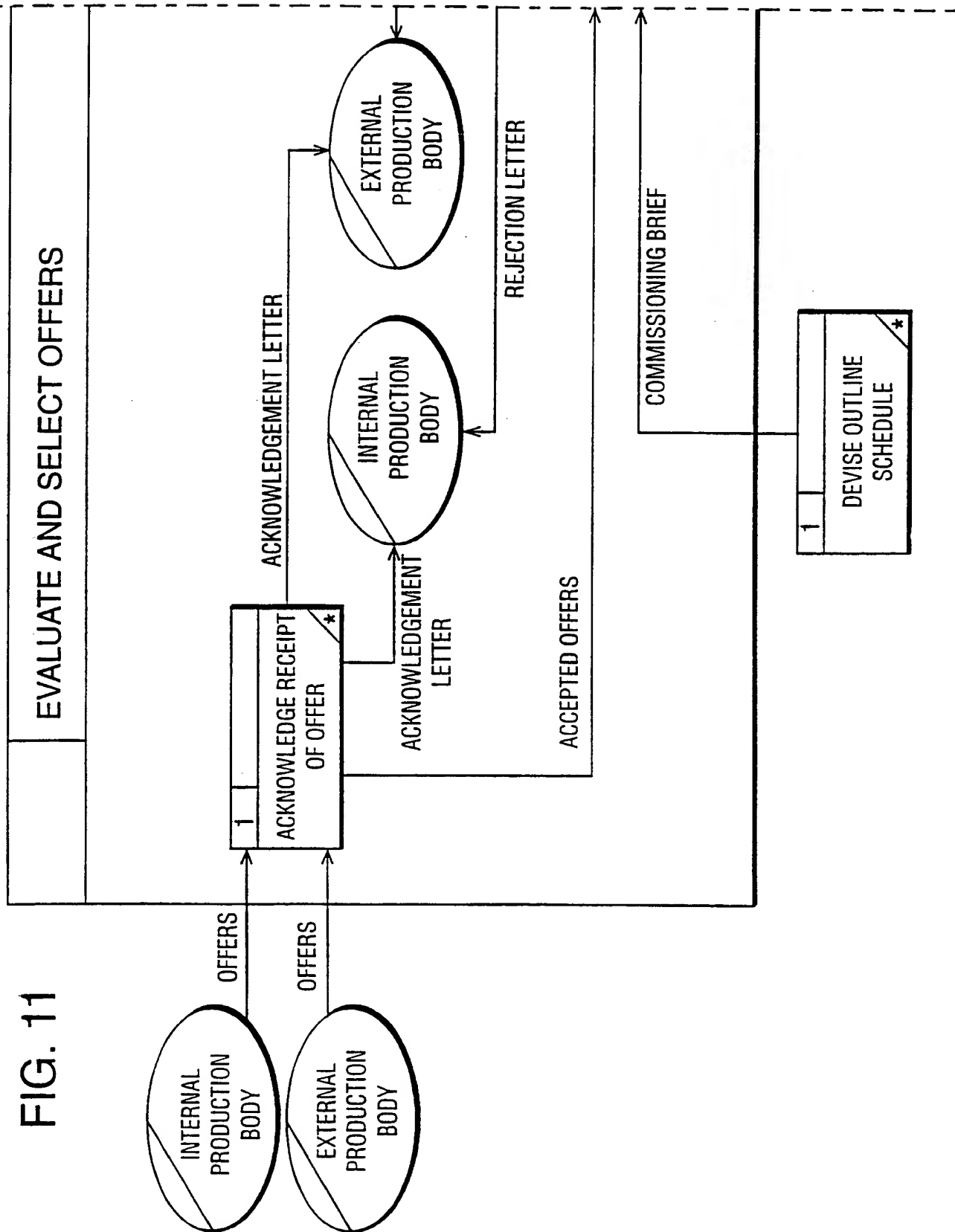
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FIG. 10 (CONTD.)



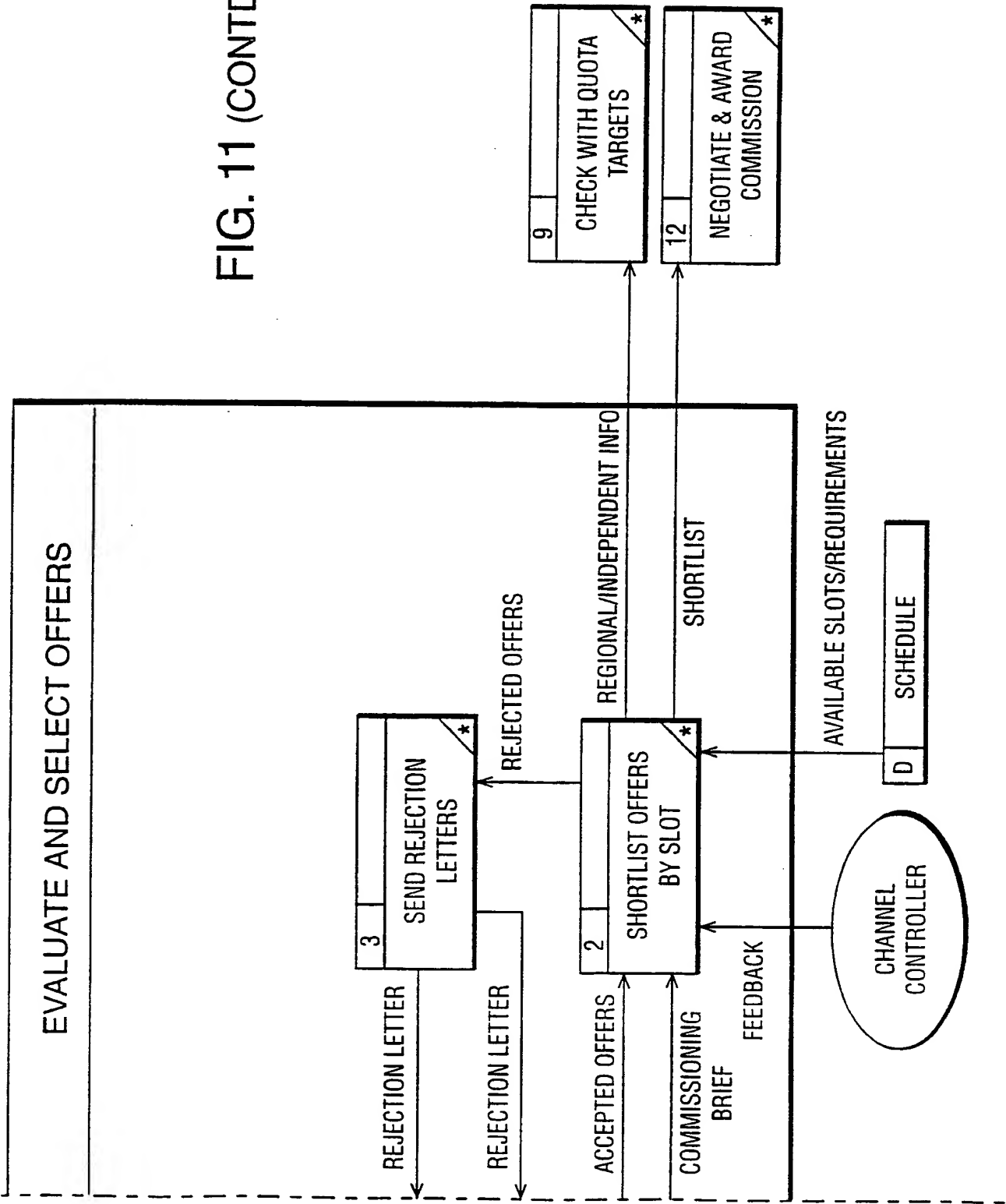
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FIG. 11



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FIG. 11 (CONTD.)



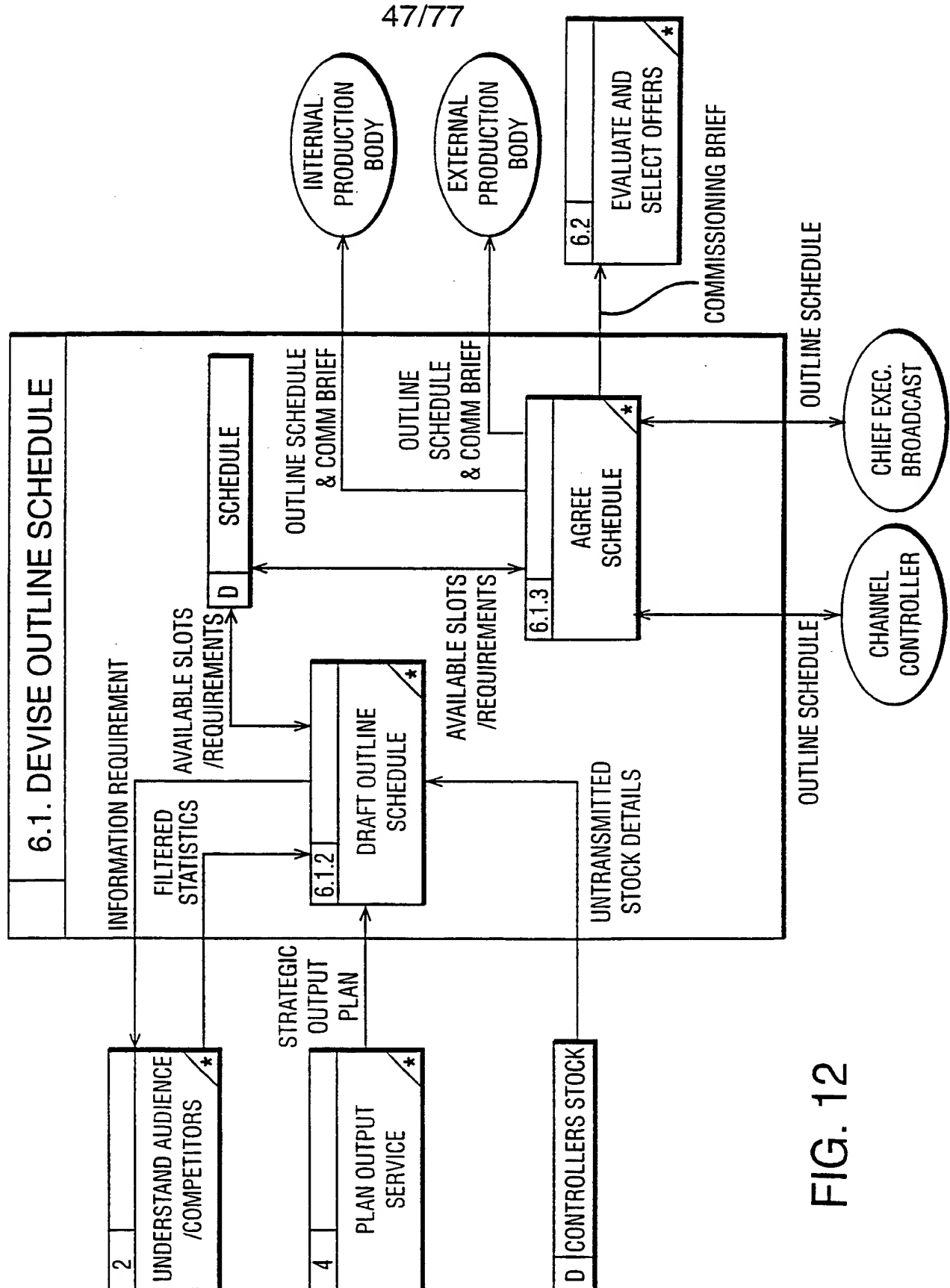
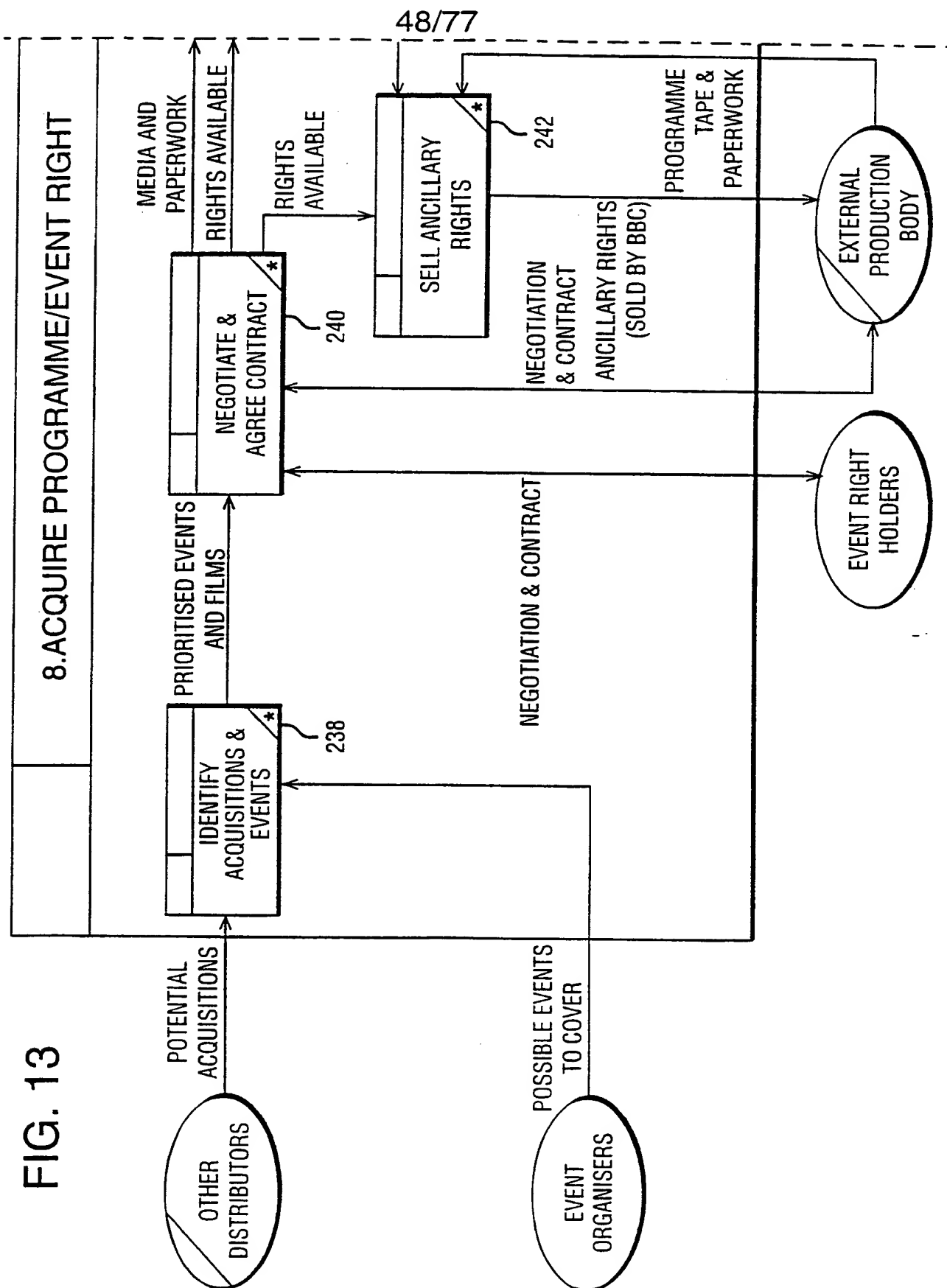


FIG. 12

FIG. 13



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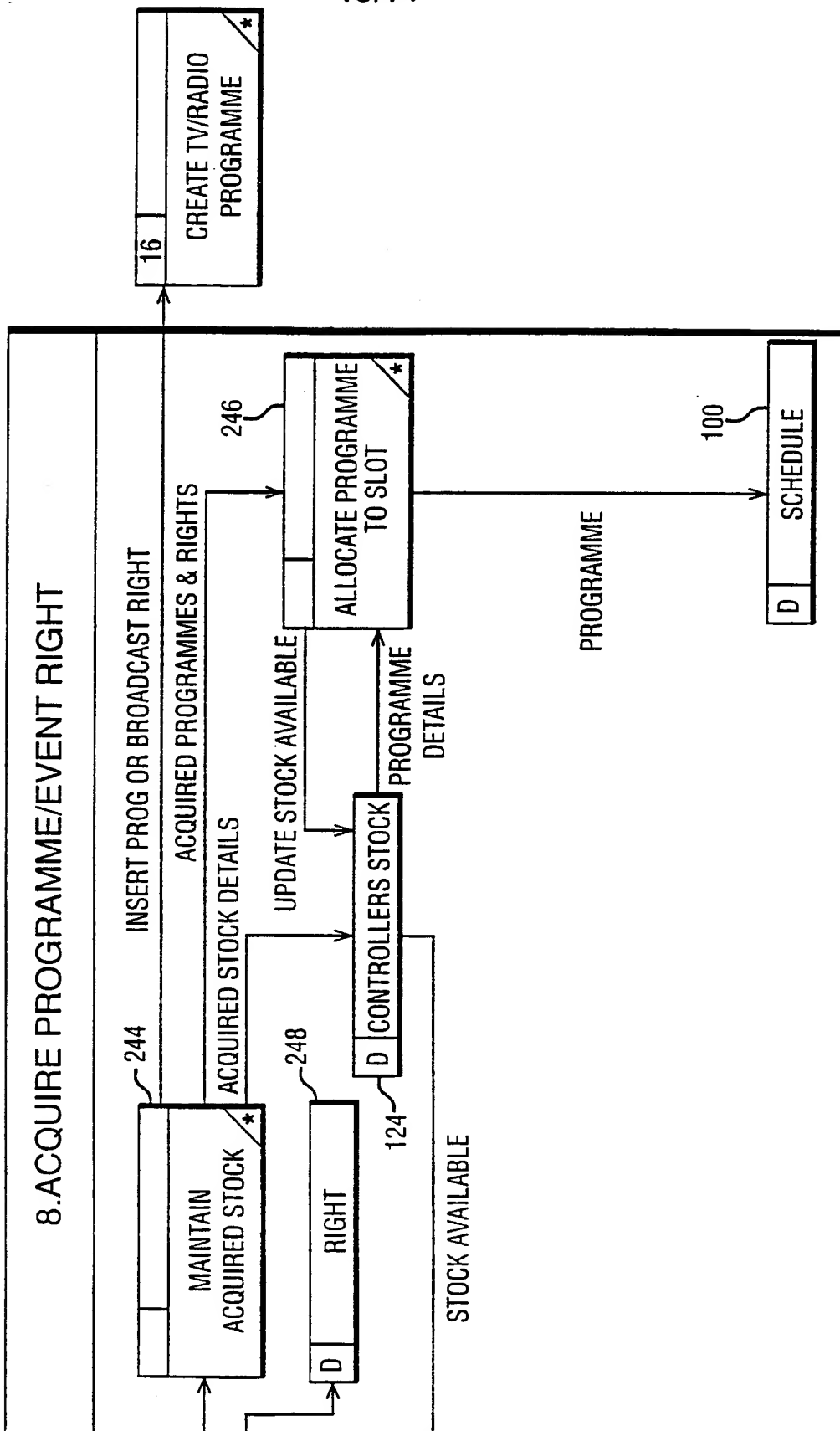
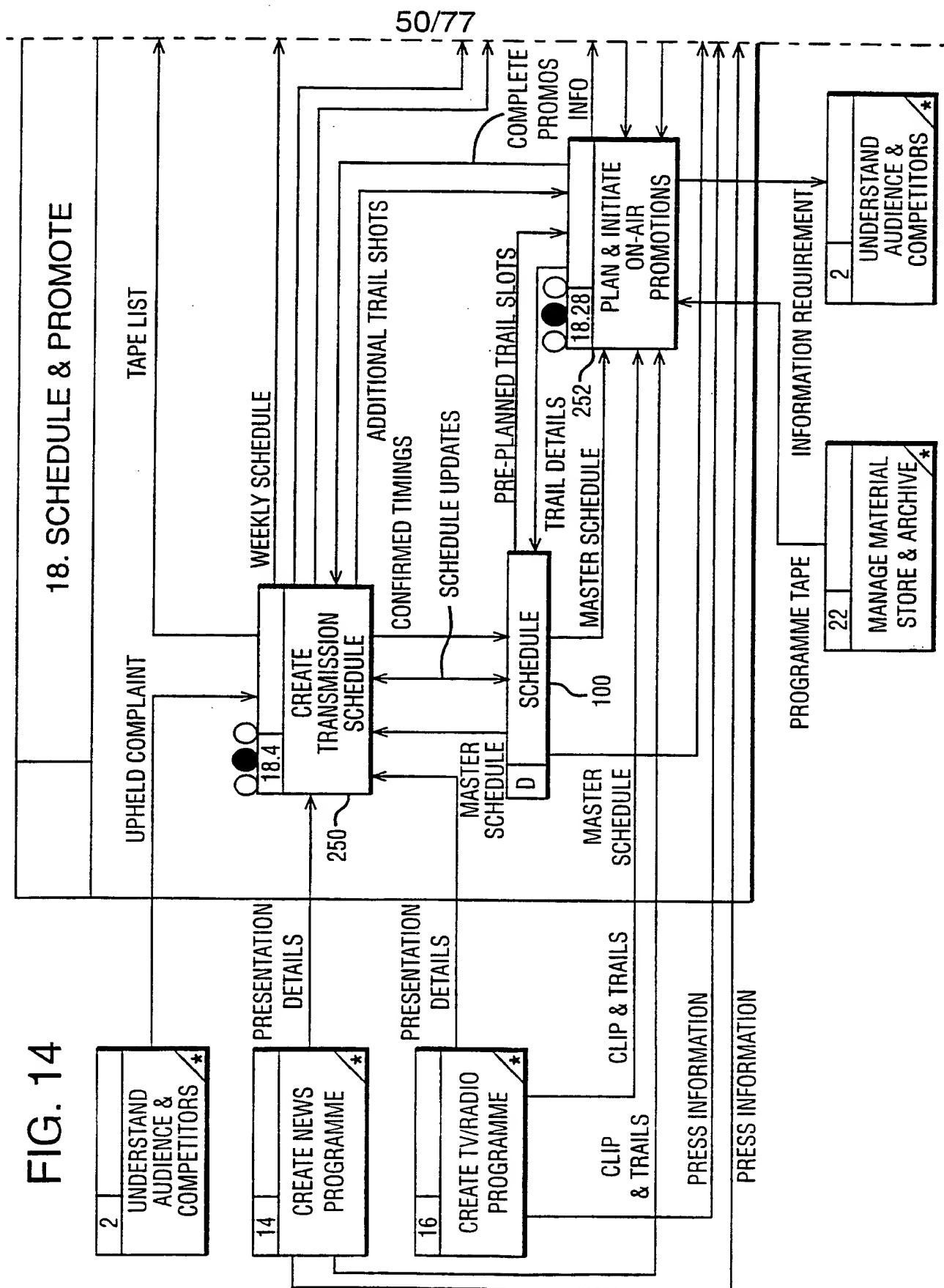


FIG. 13 (CONTD.)

FIG. 14



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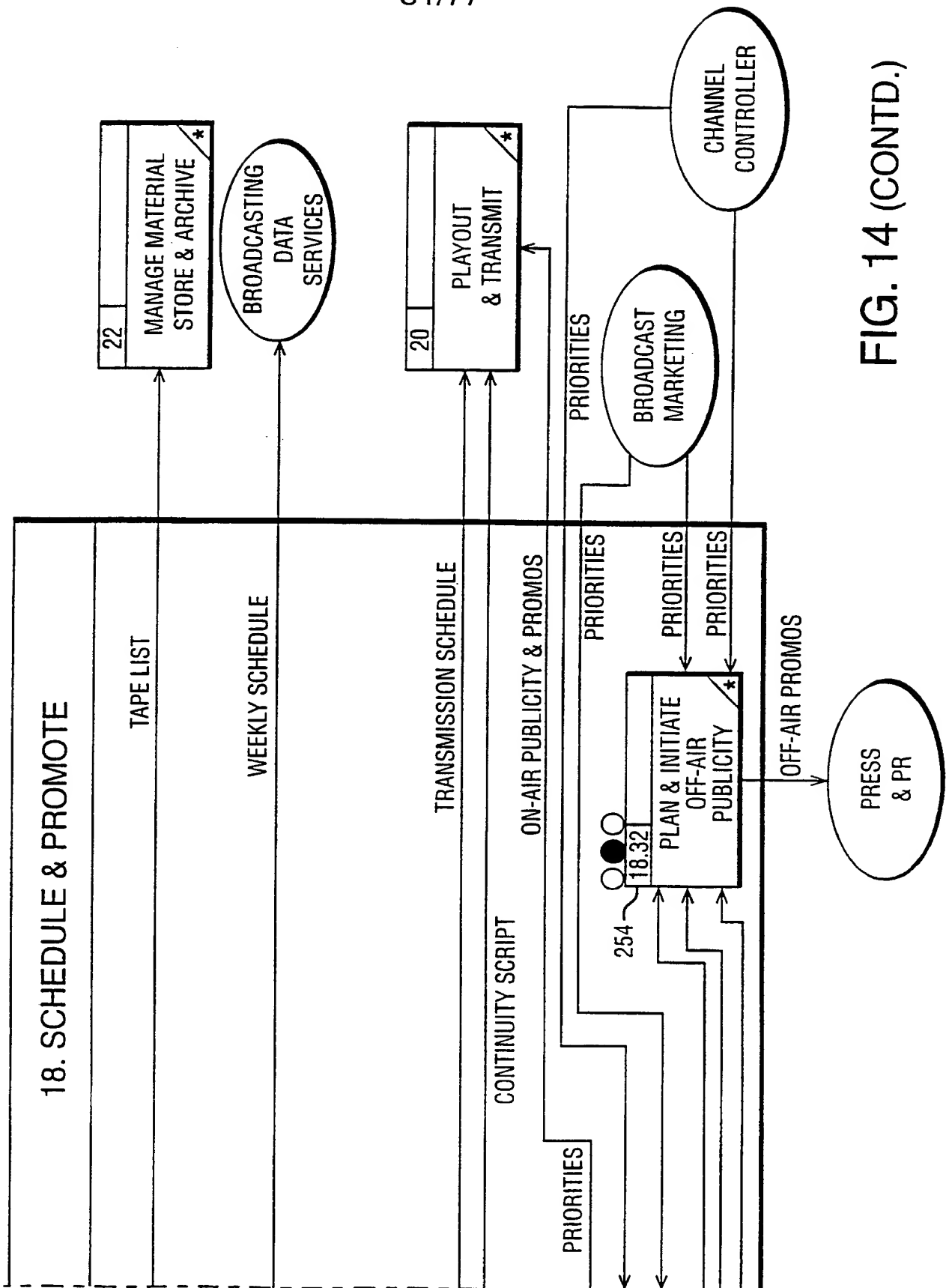
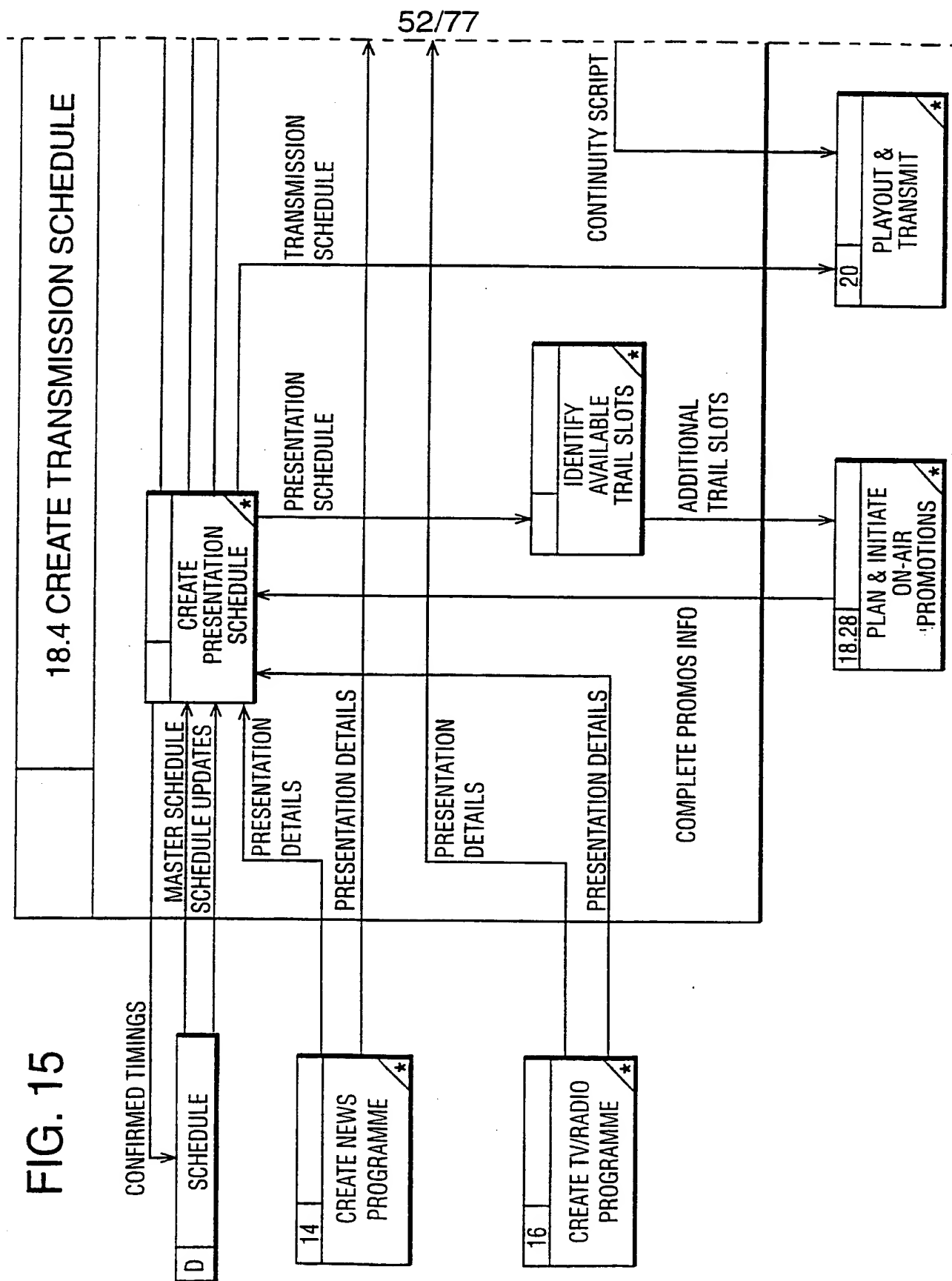


FIG. 14 (CONTD.)

FIG. 15



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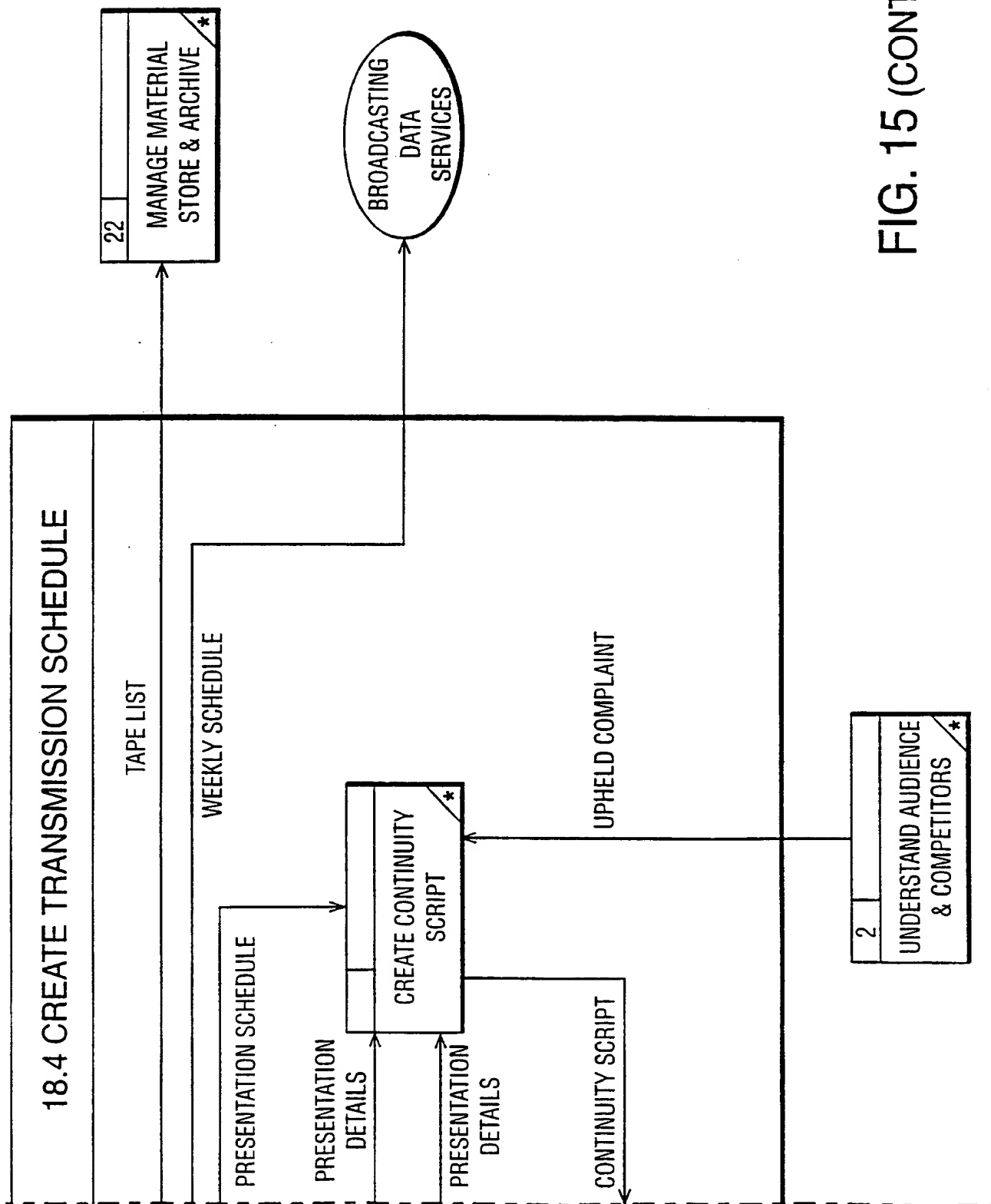
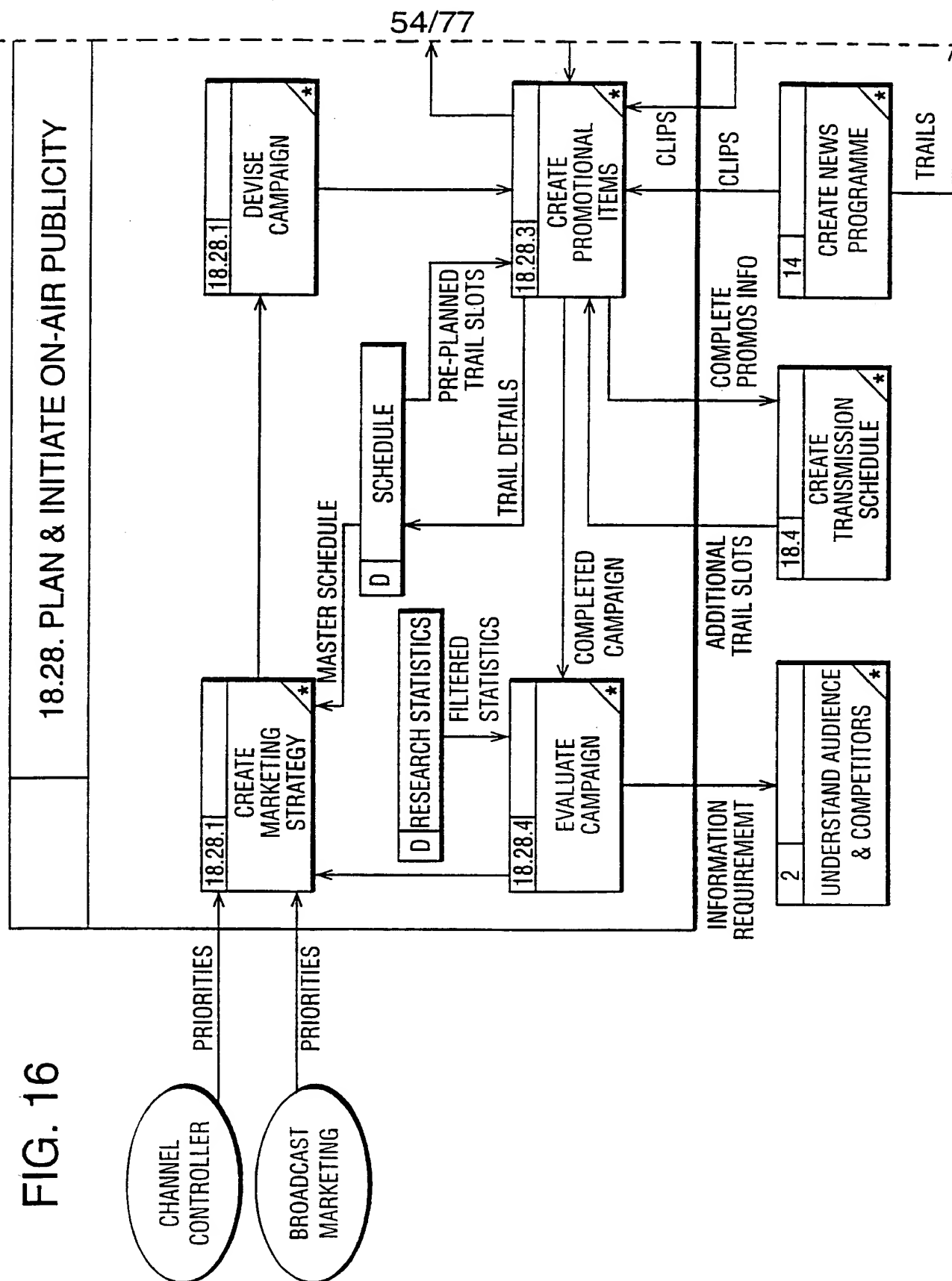


FIG. 15 (CONTD.)

FIG. 16



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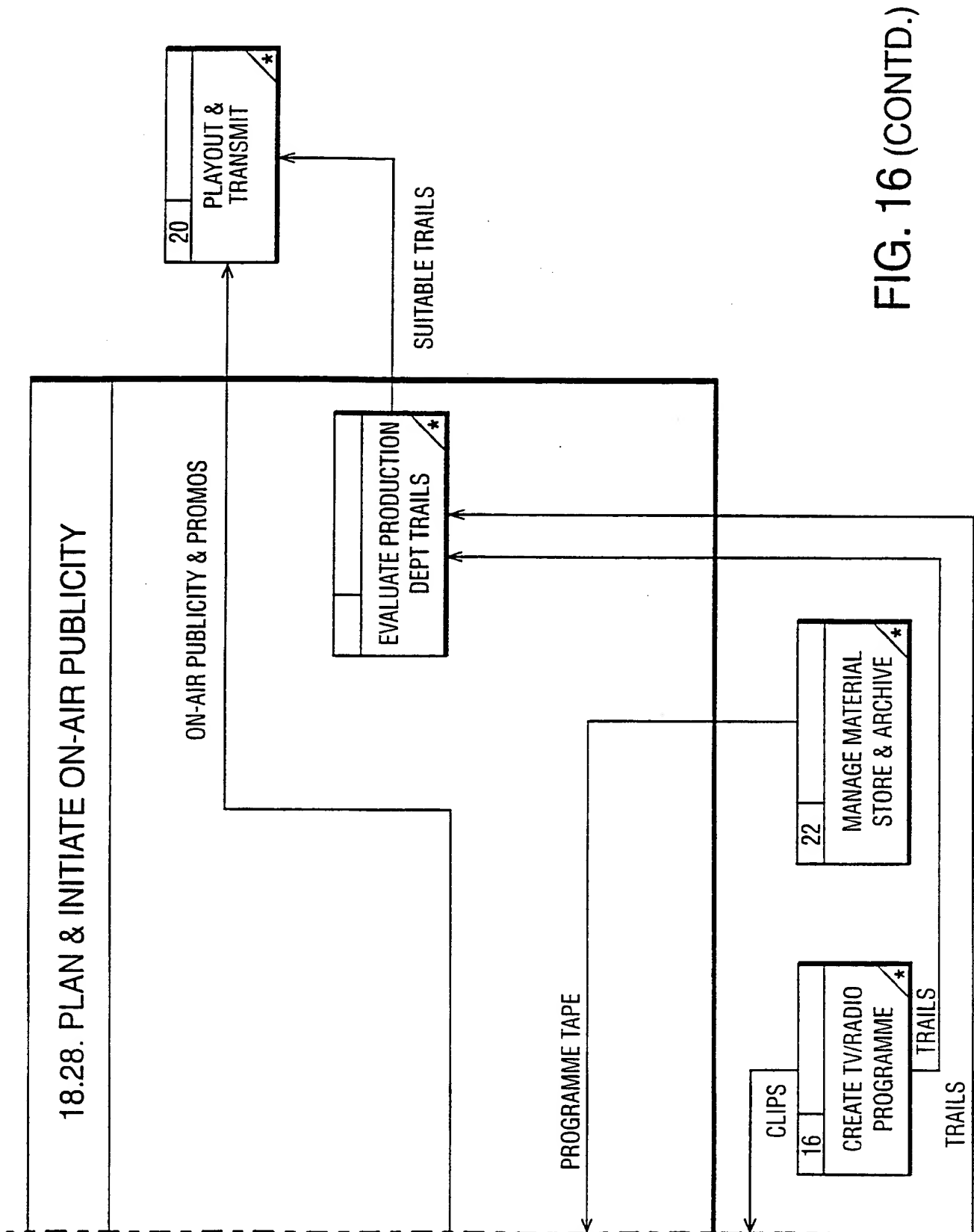
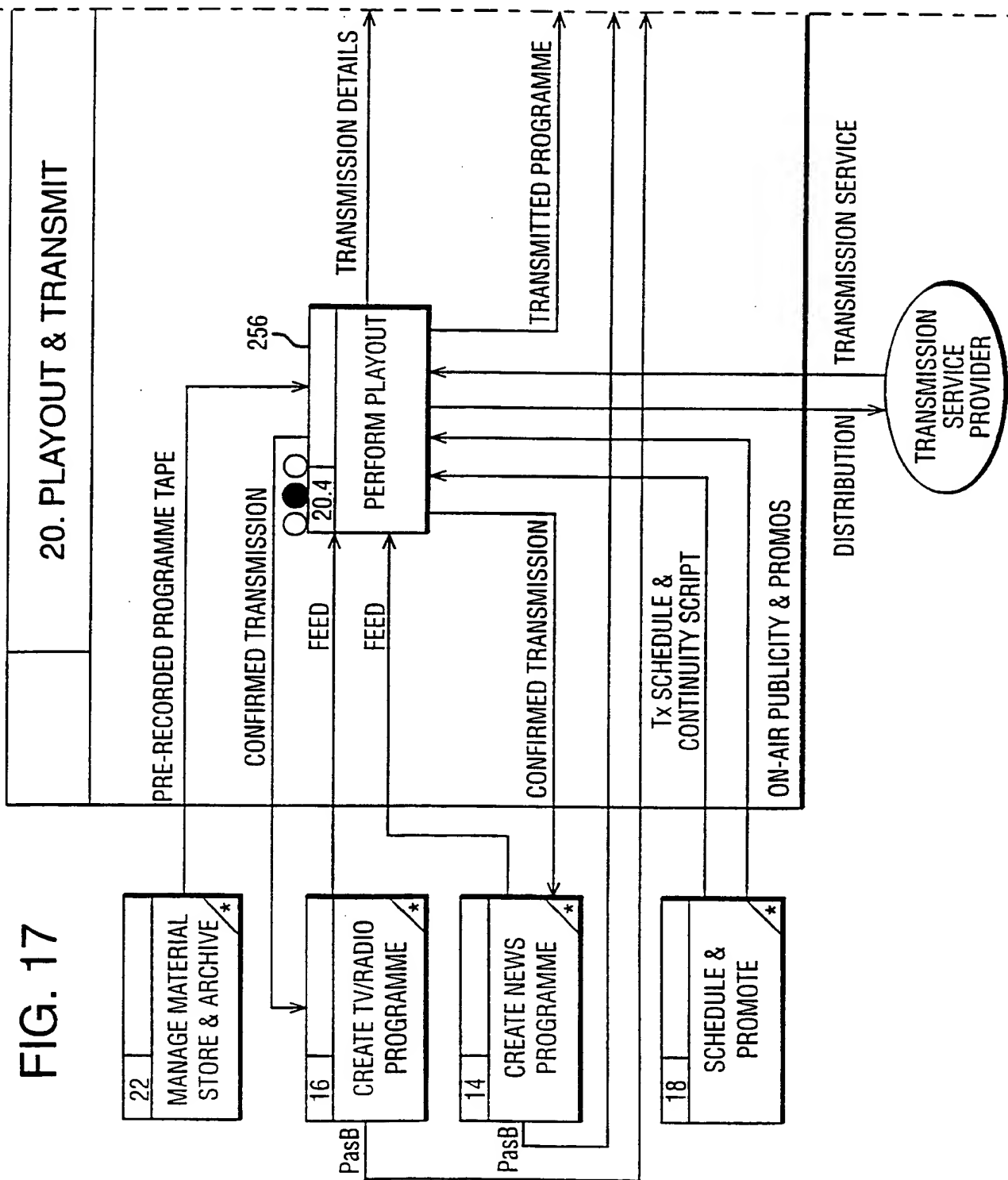


FIG. 16 (CONTD.)

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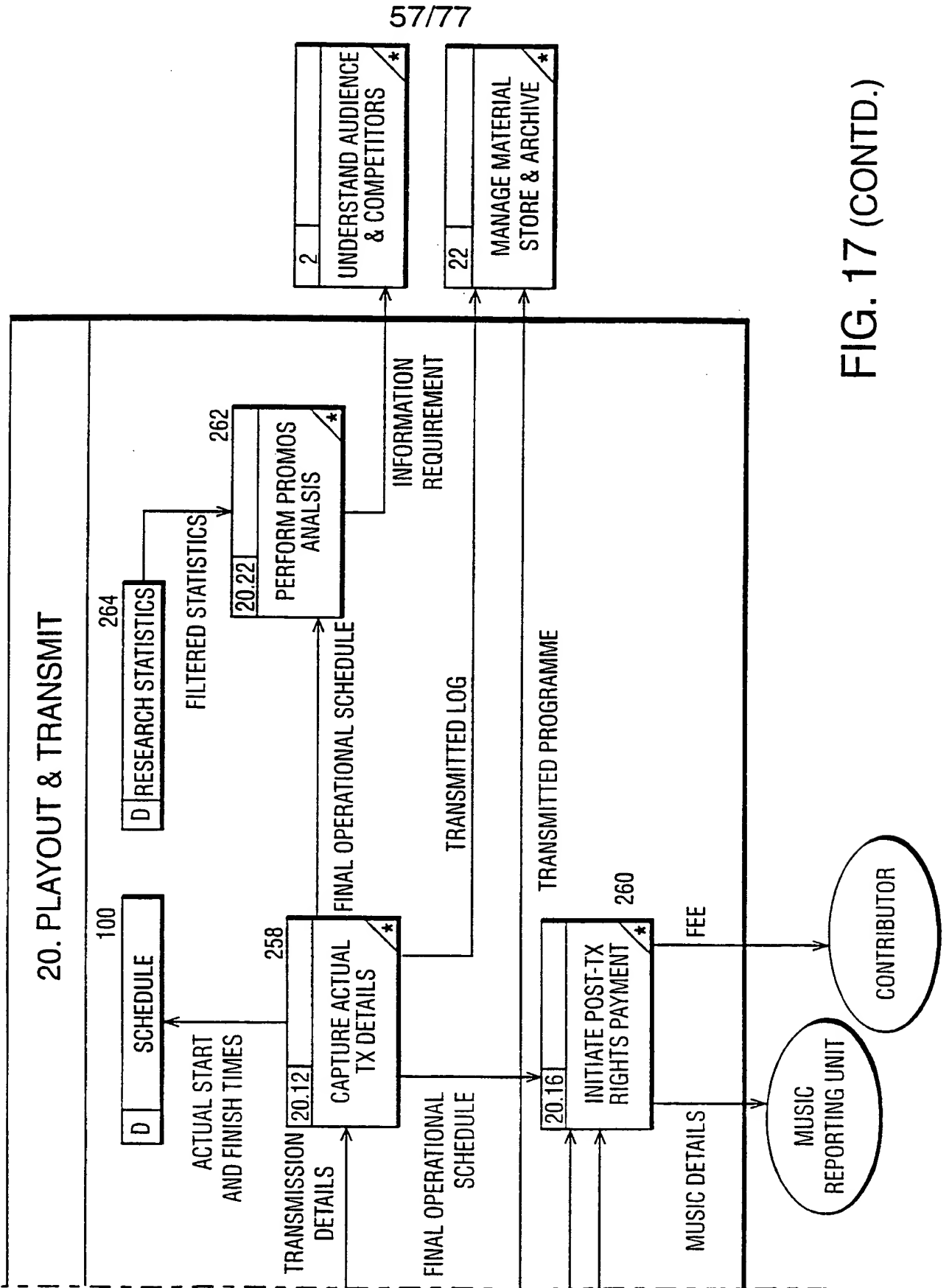


FIG. 17 (CONTD.)

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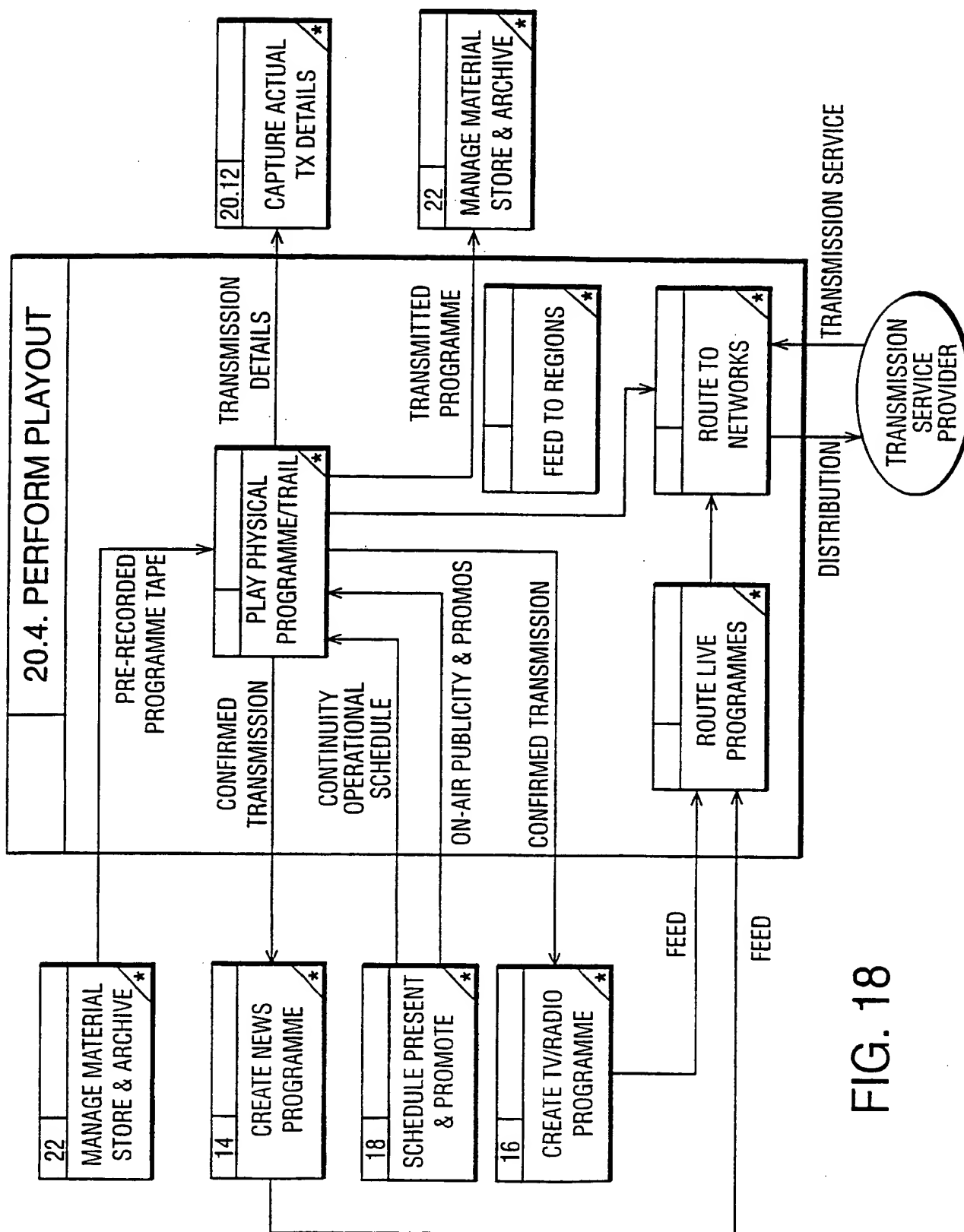
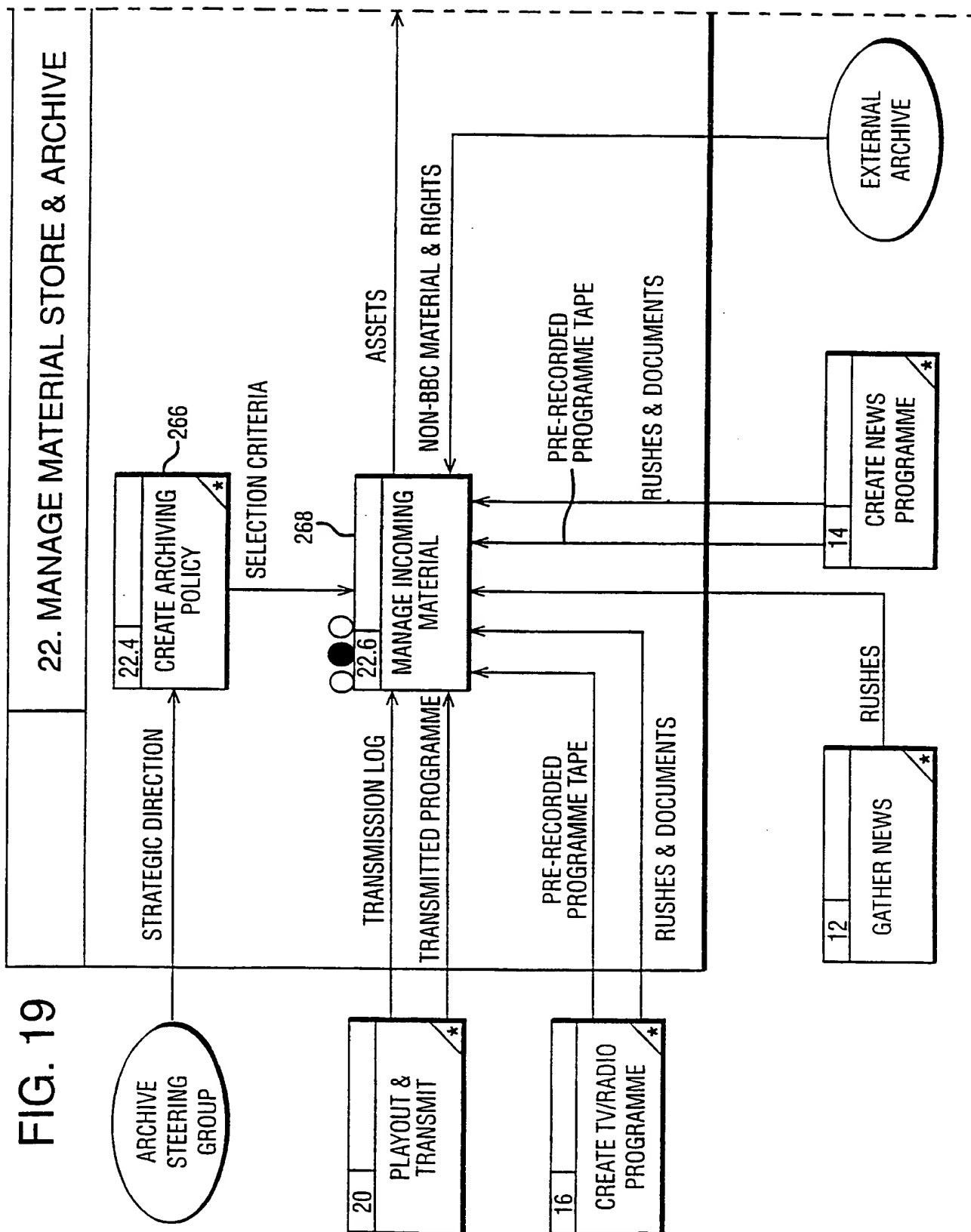
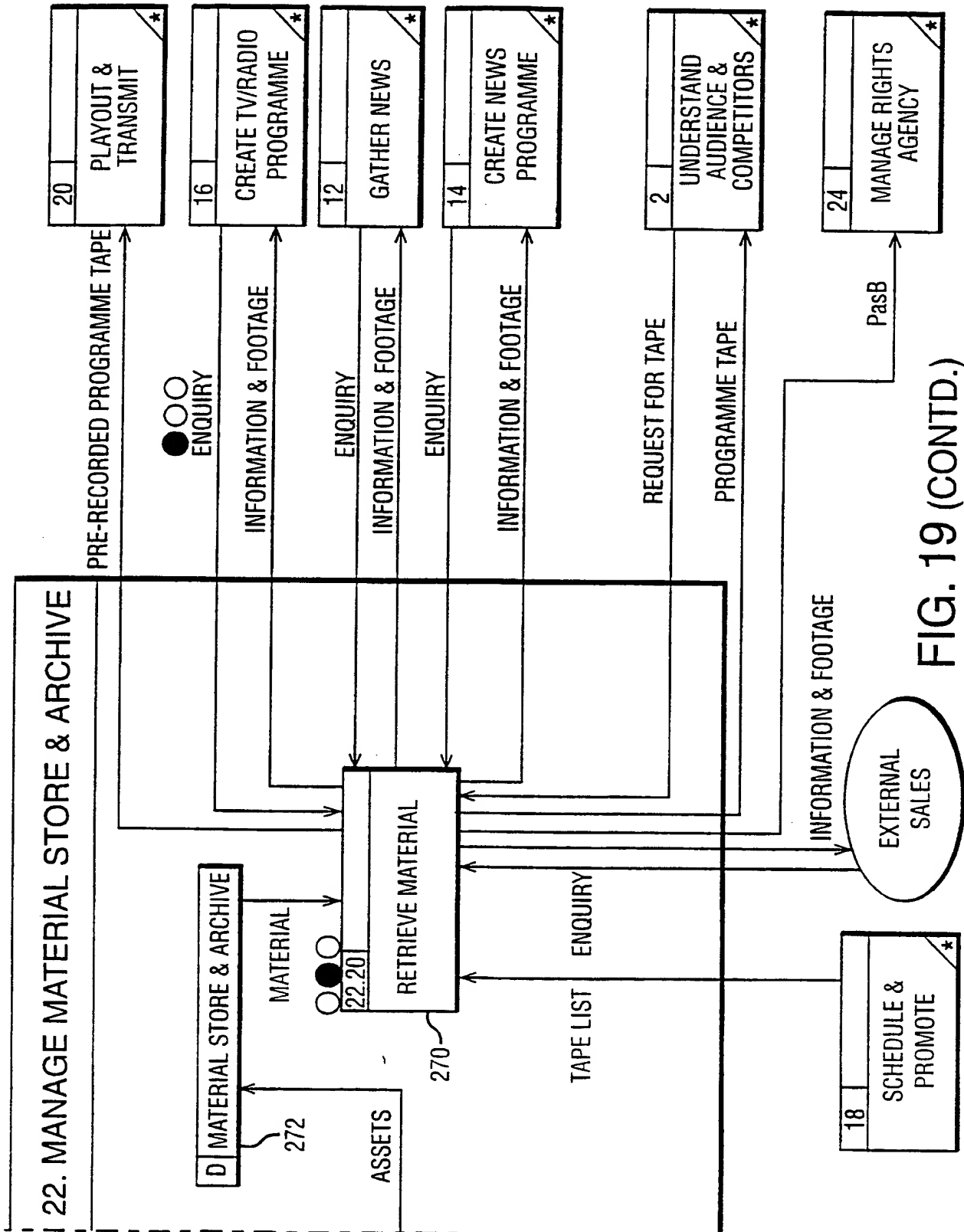


FIG. 18

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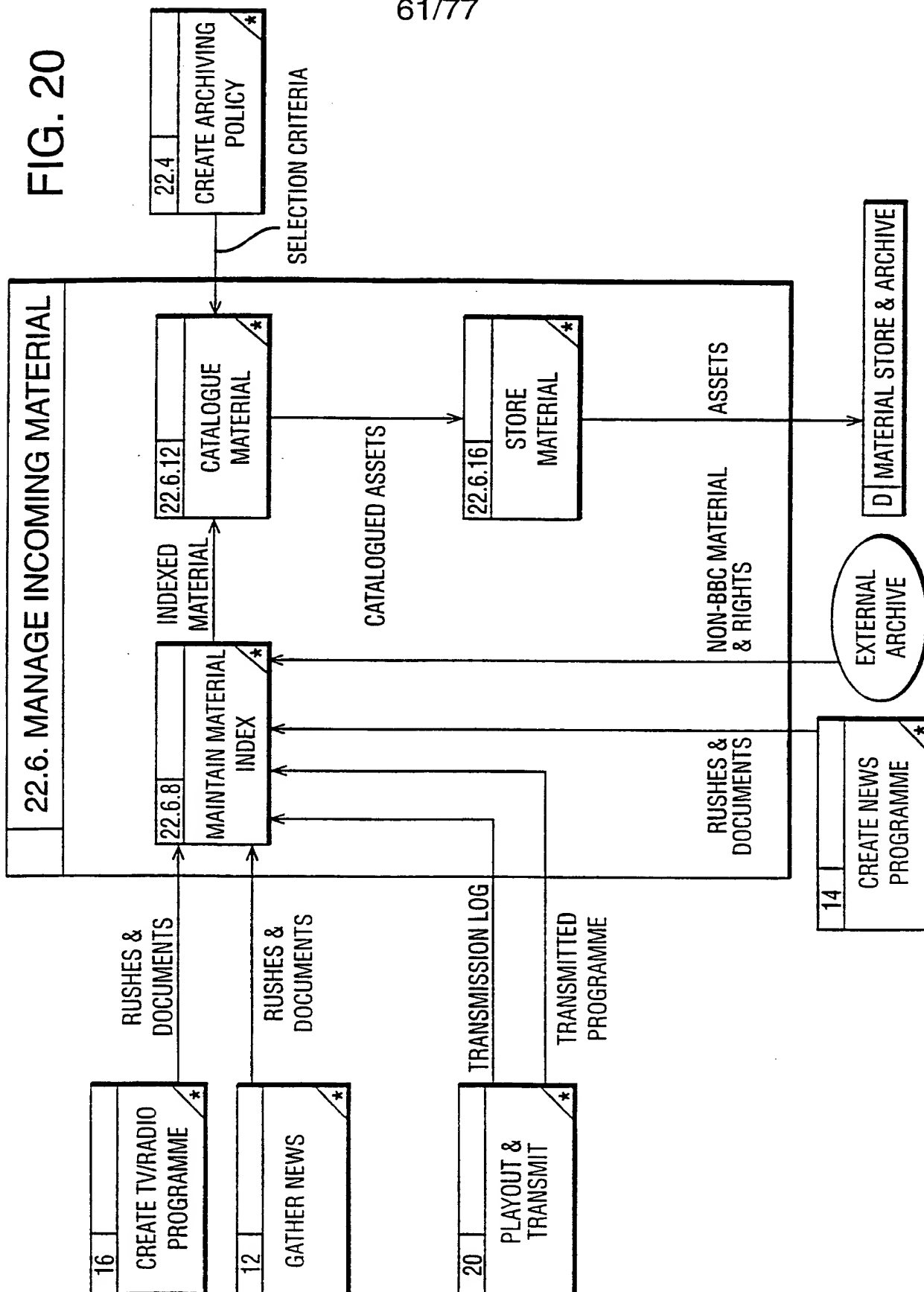


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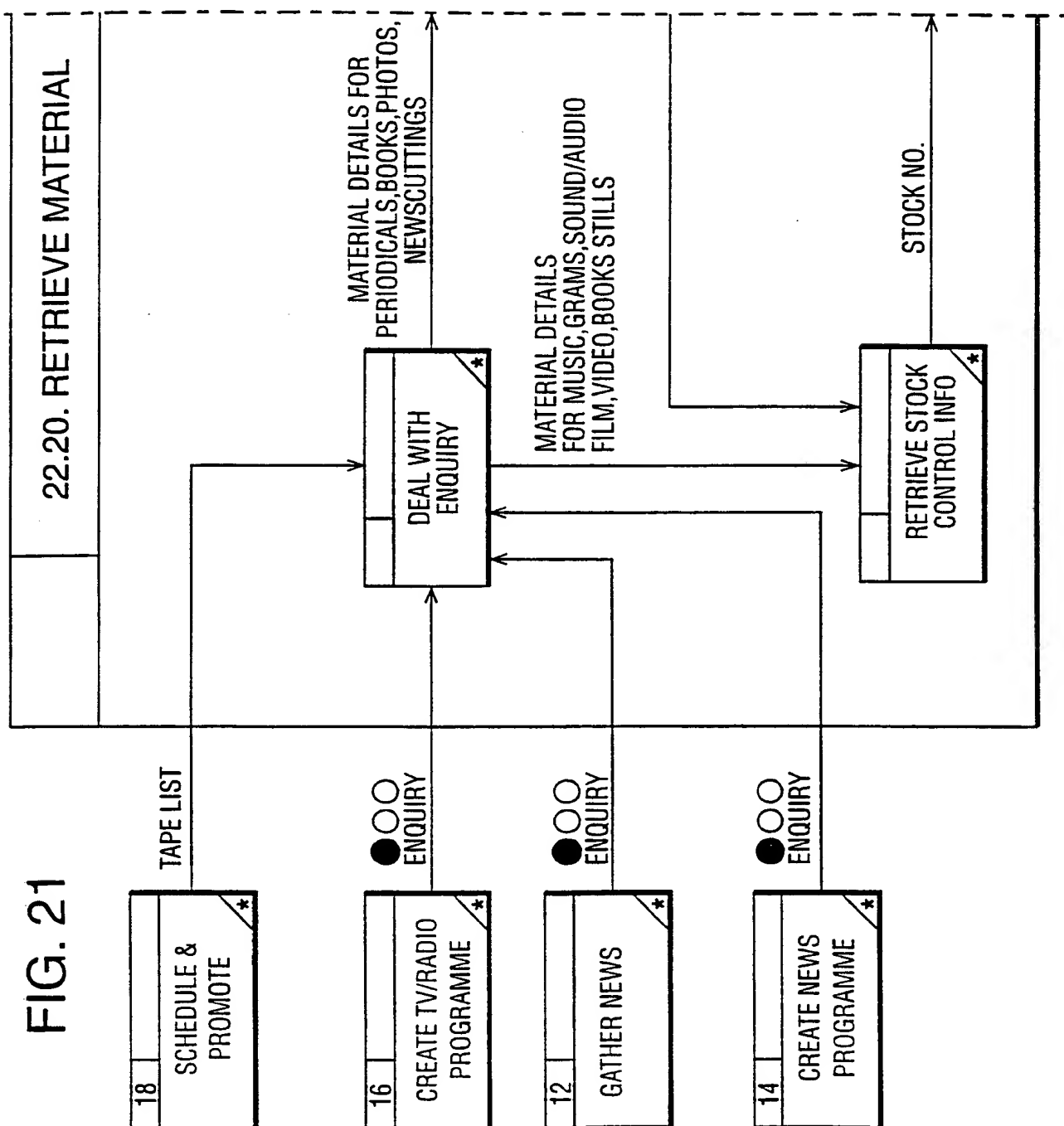


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FIG. 20

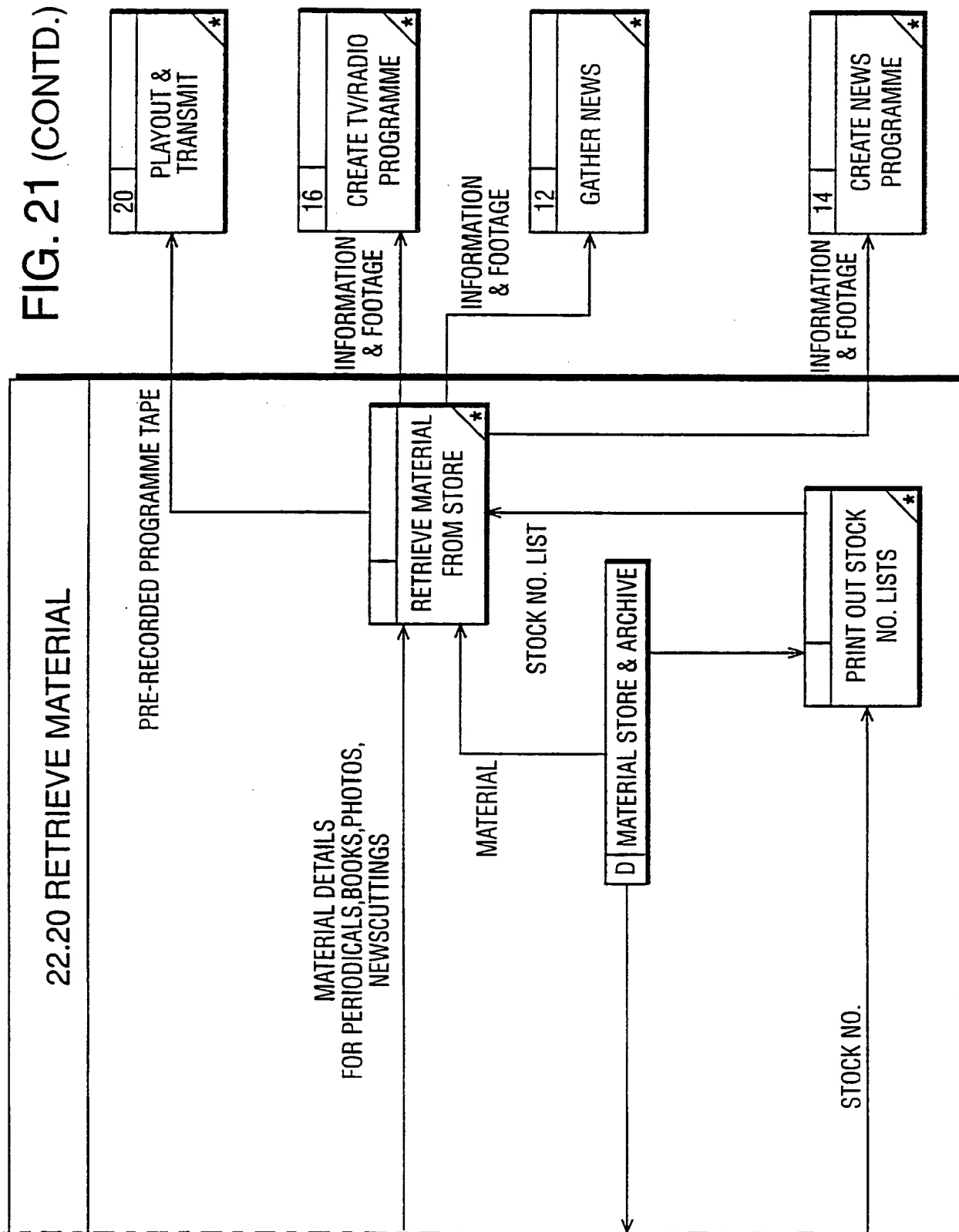


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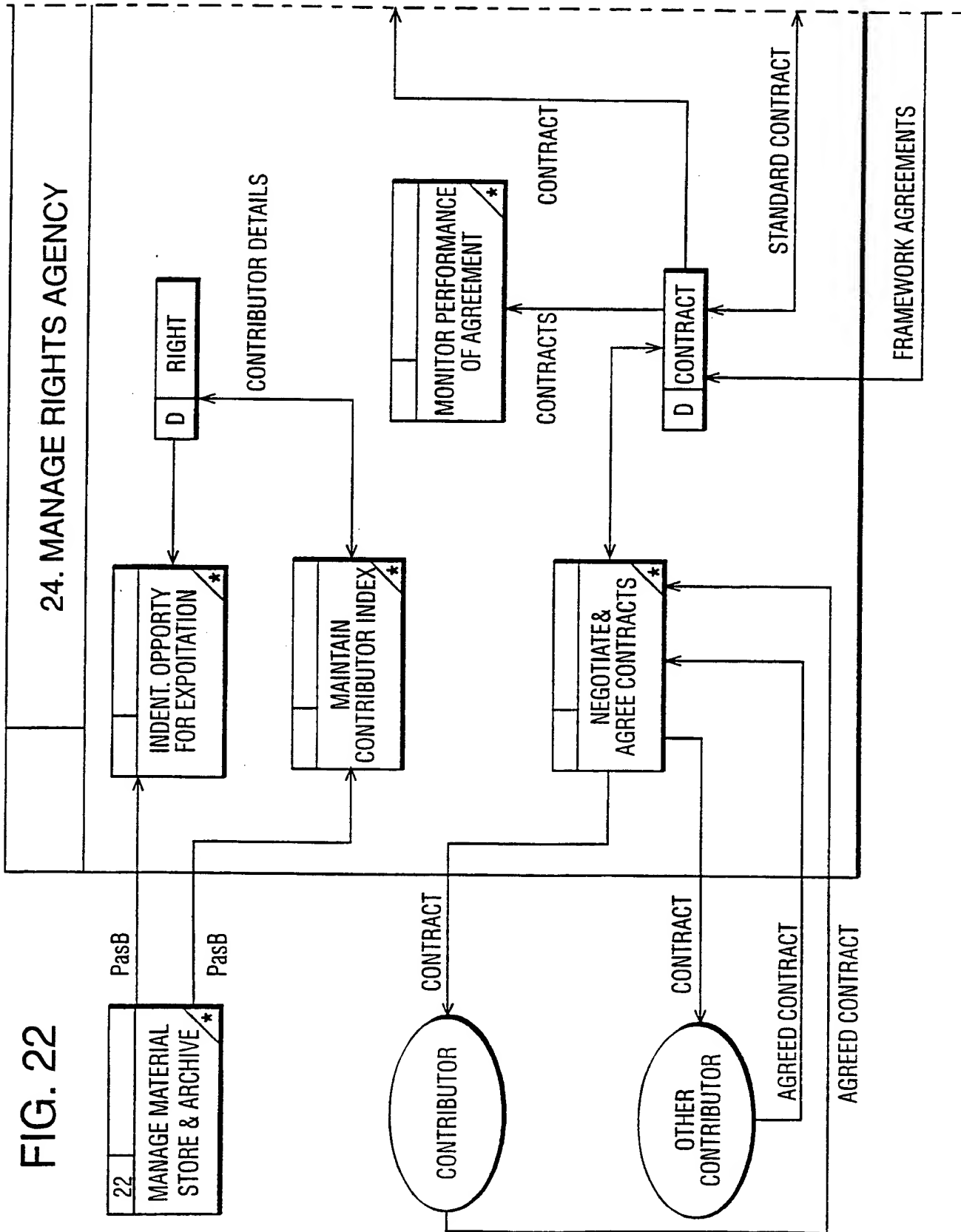


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FIG. 21 (CONTD.)



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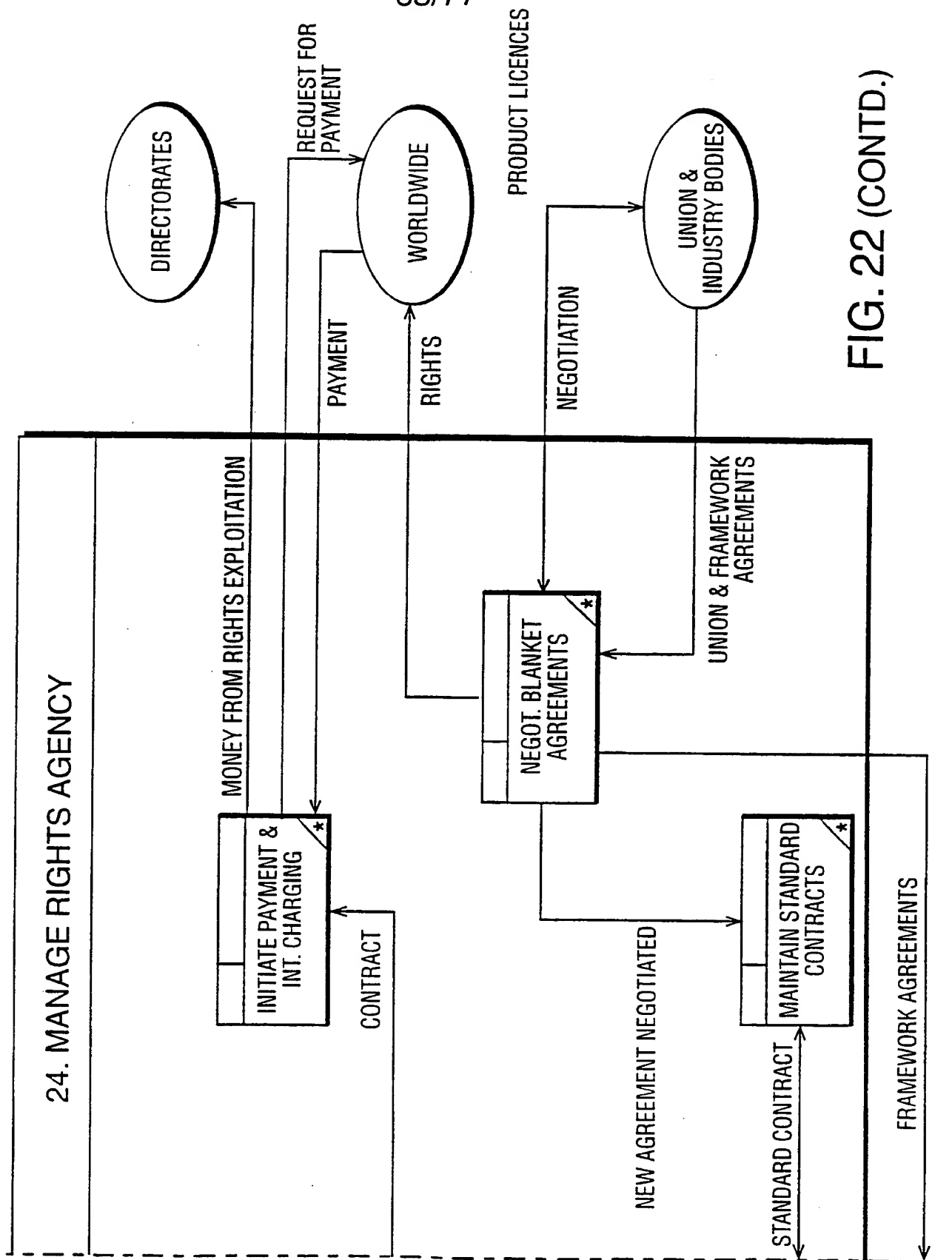
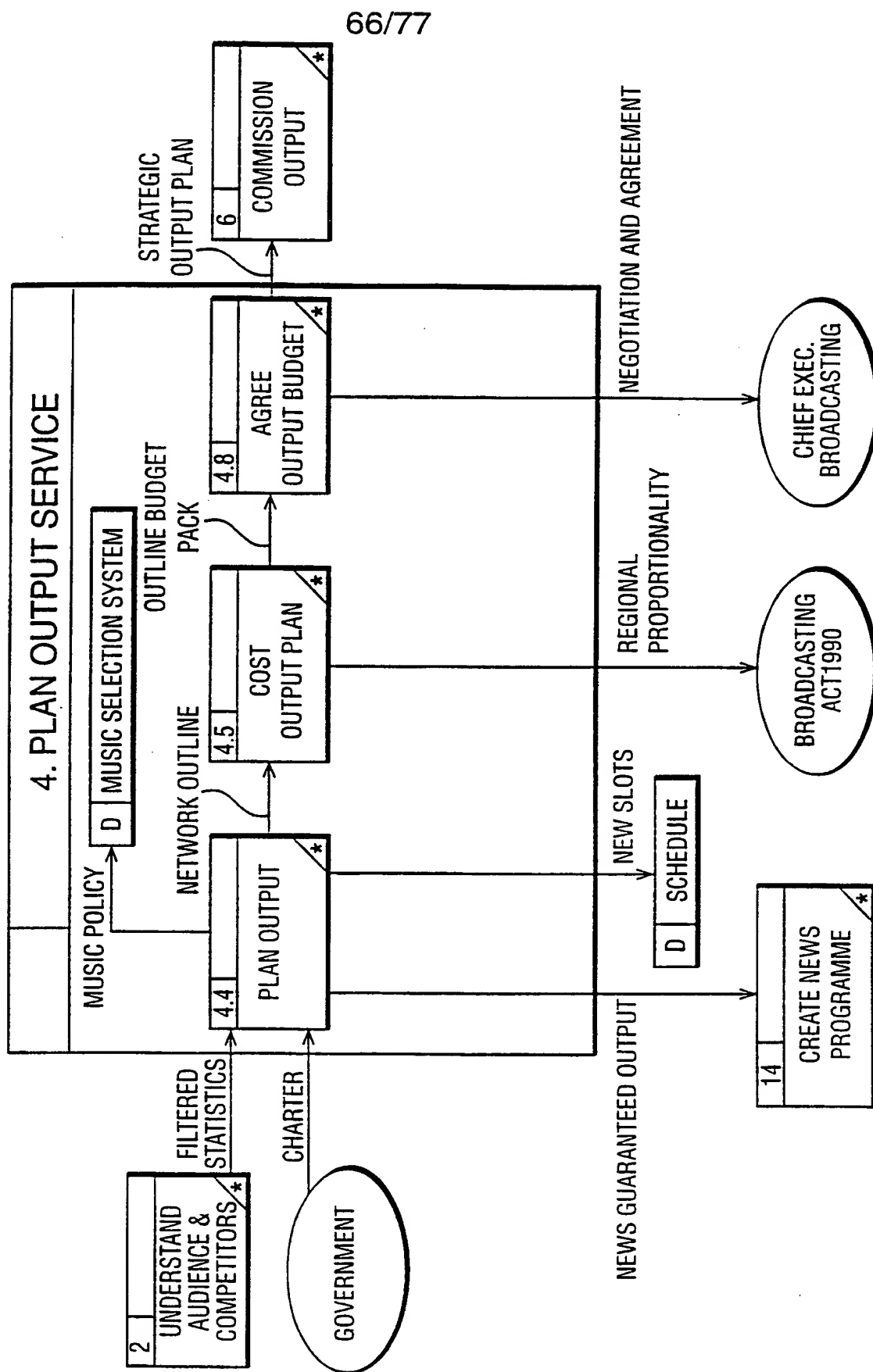


FIG. 22 (CONTD.)

FIG. 23

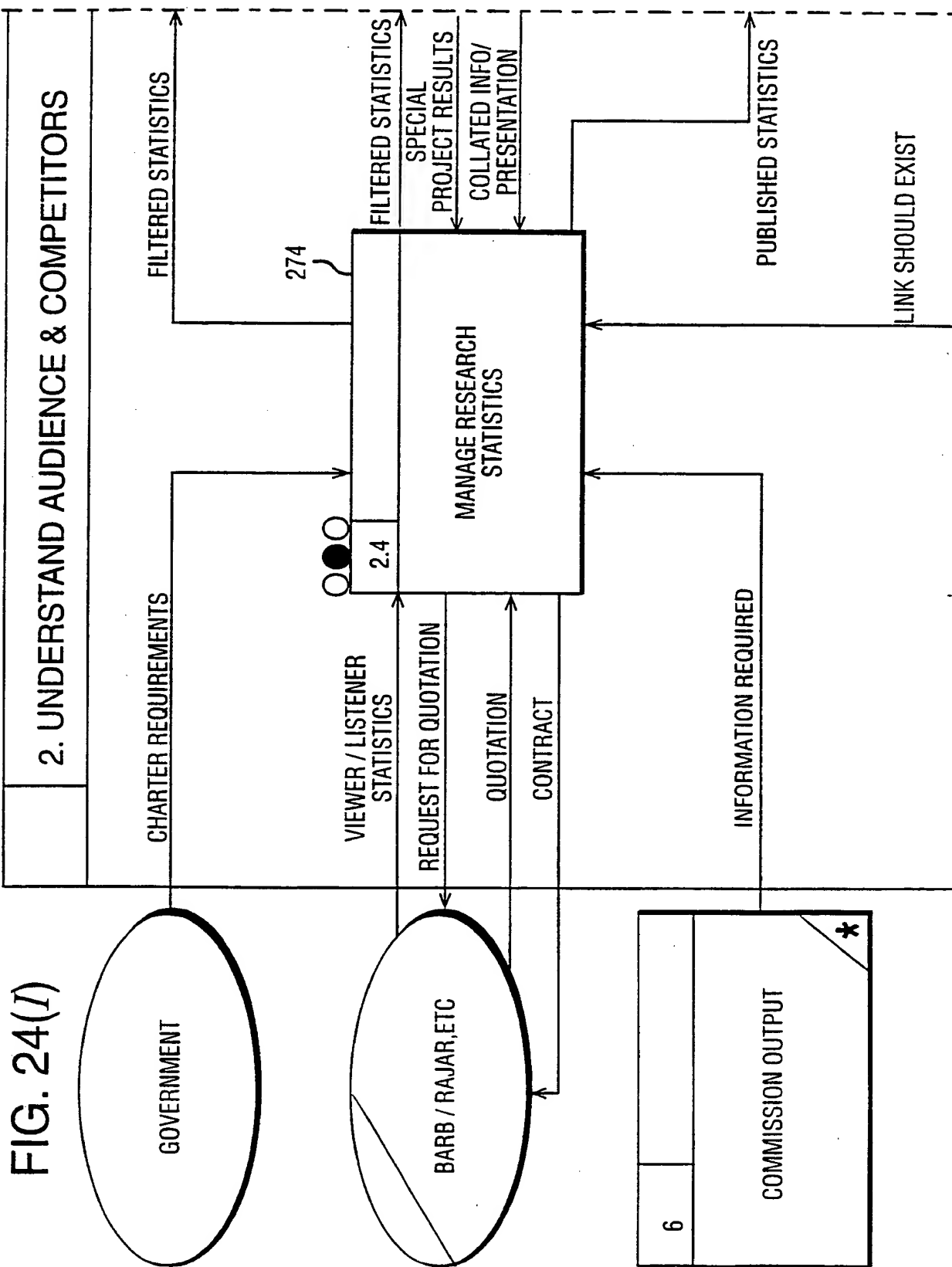


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FIG. 24

FIG. 24(I)	FIG. 24(II)
FIG. 24(III)	FIG. 24(IV)

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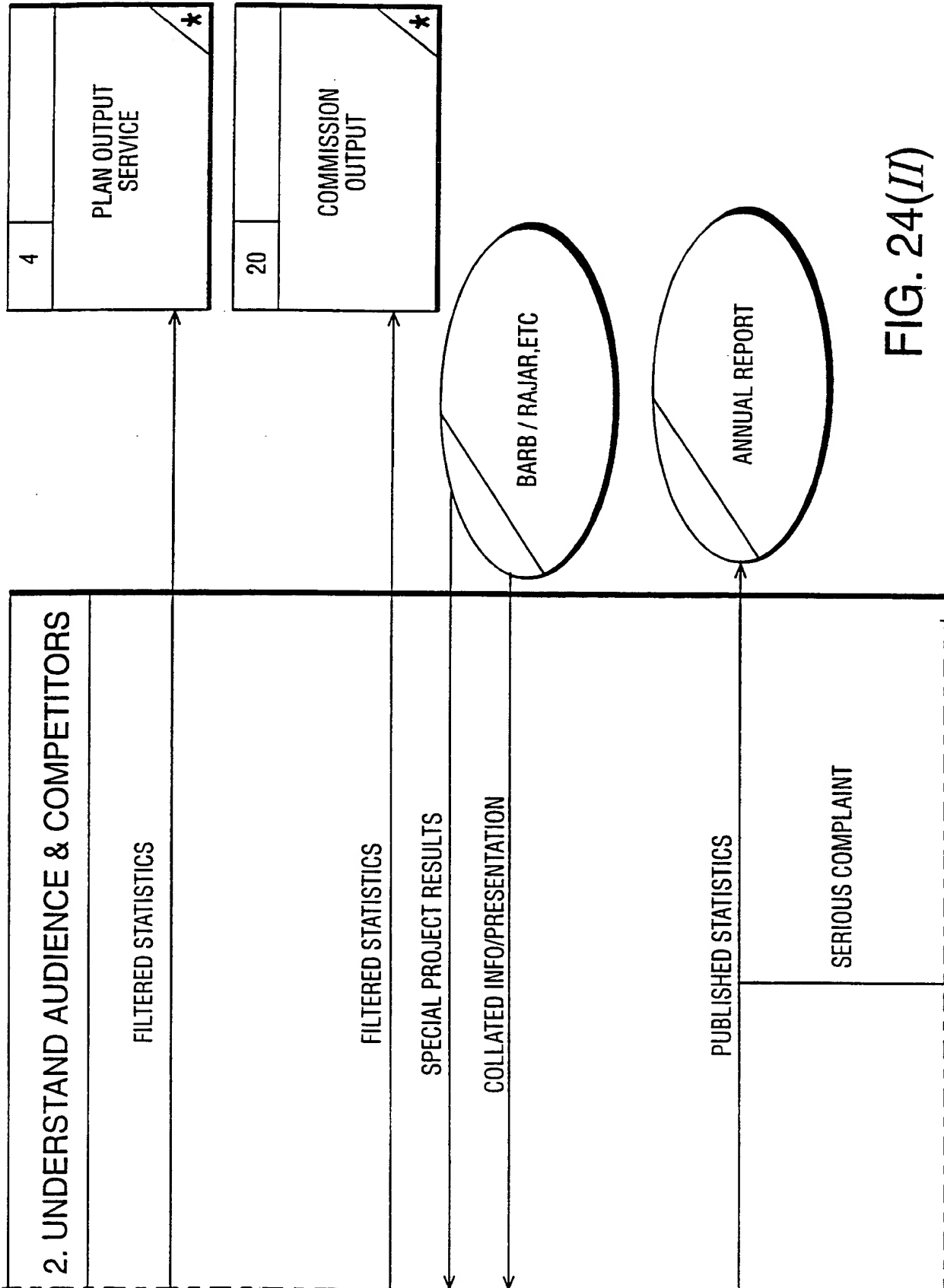
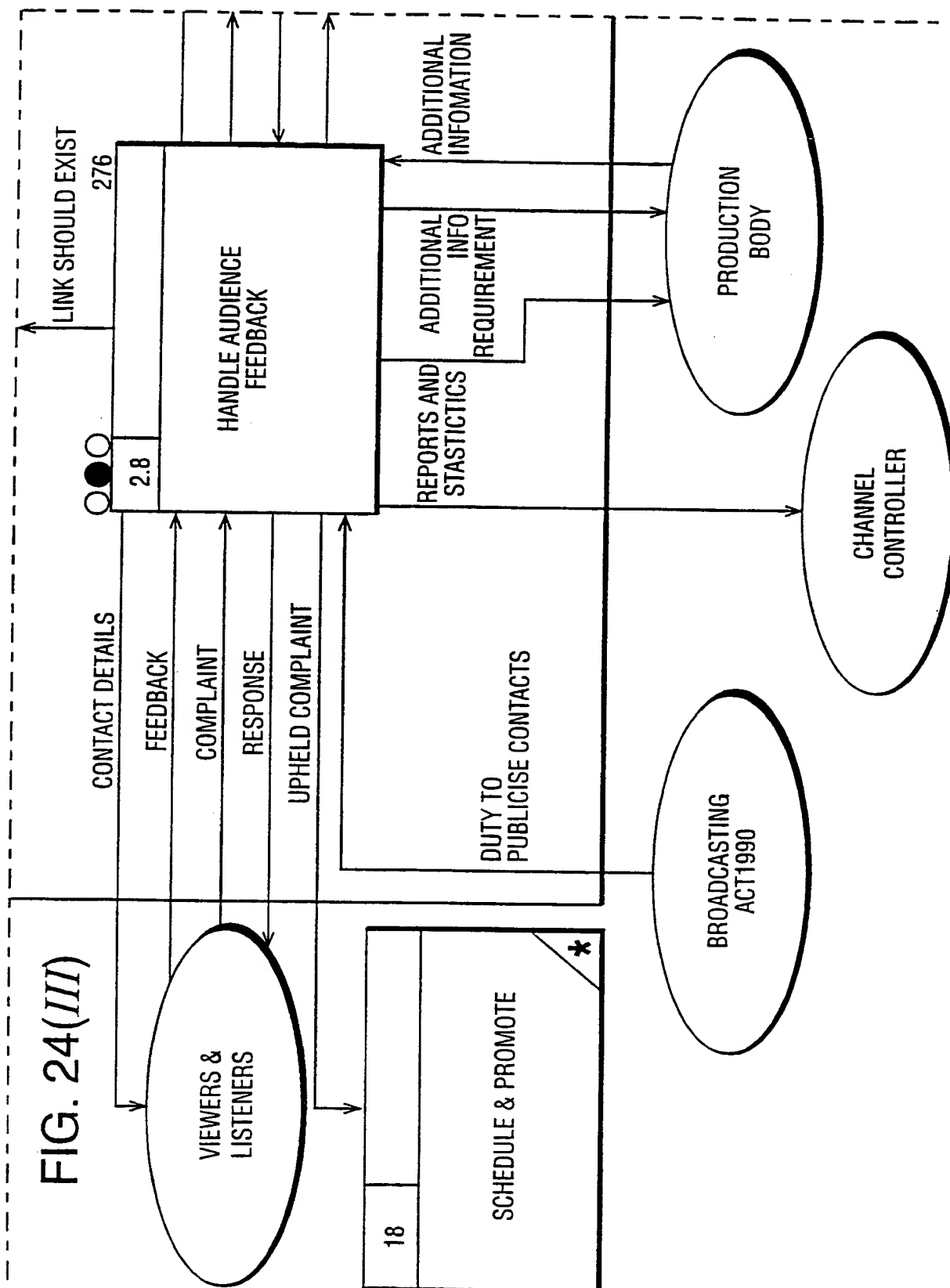


FIG. 24(II)

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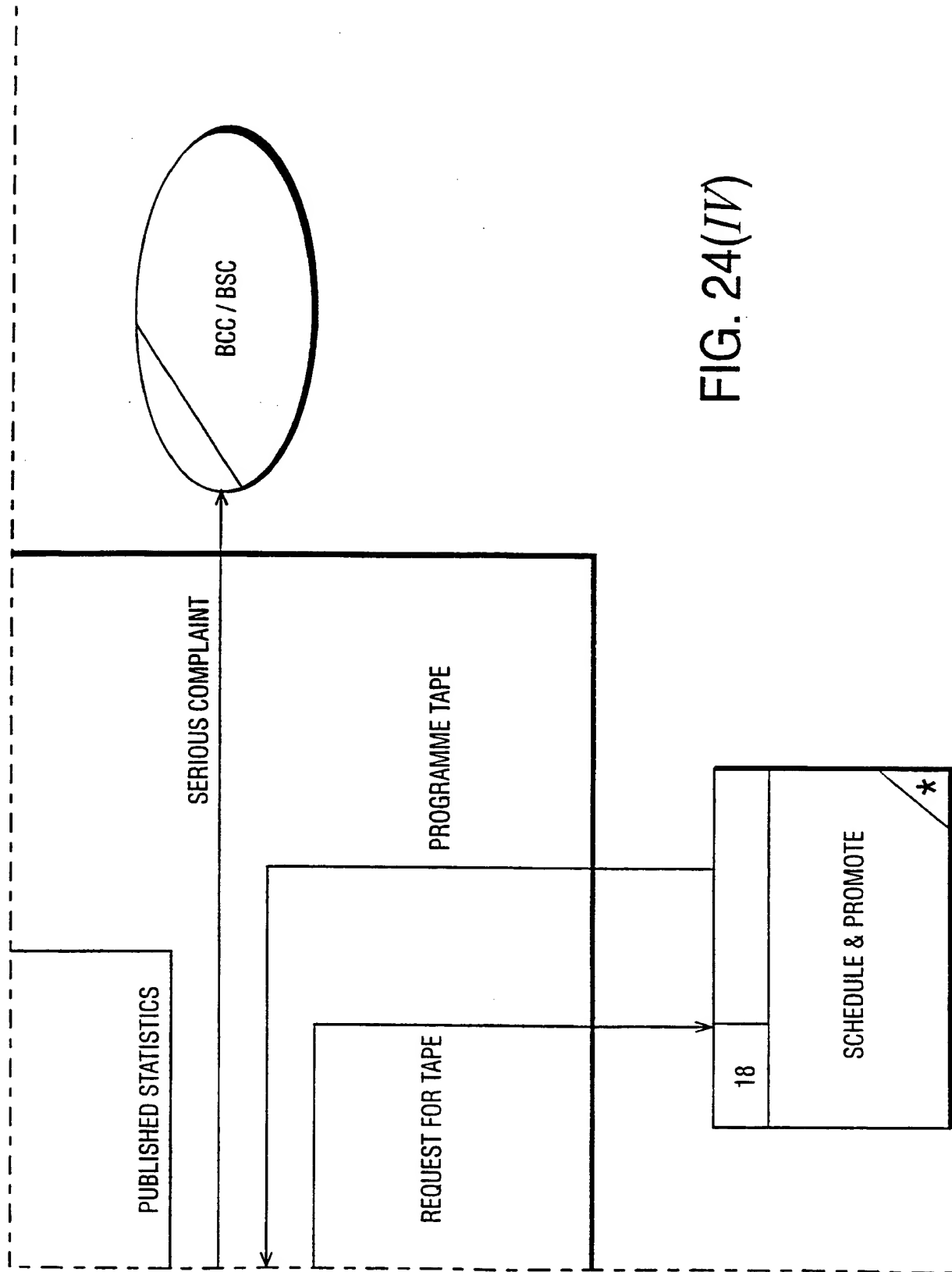
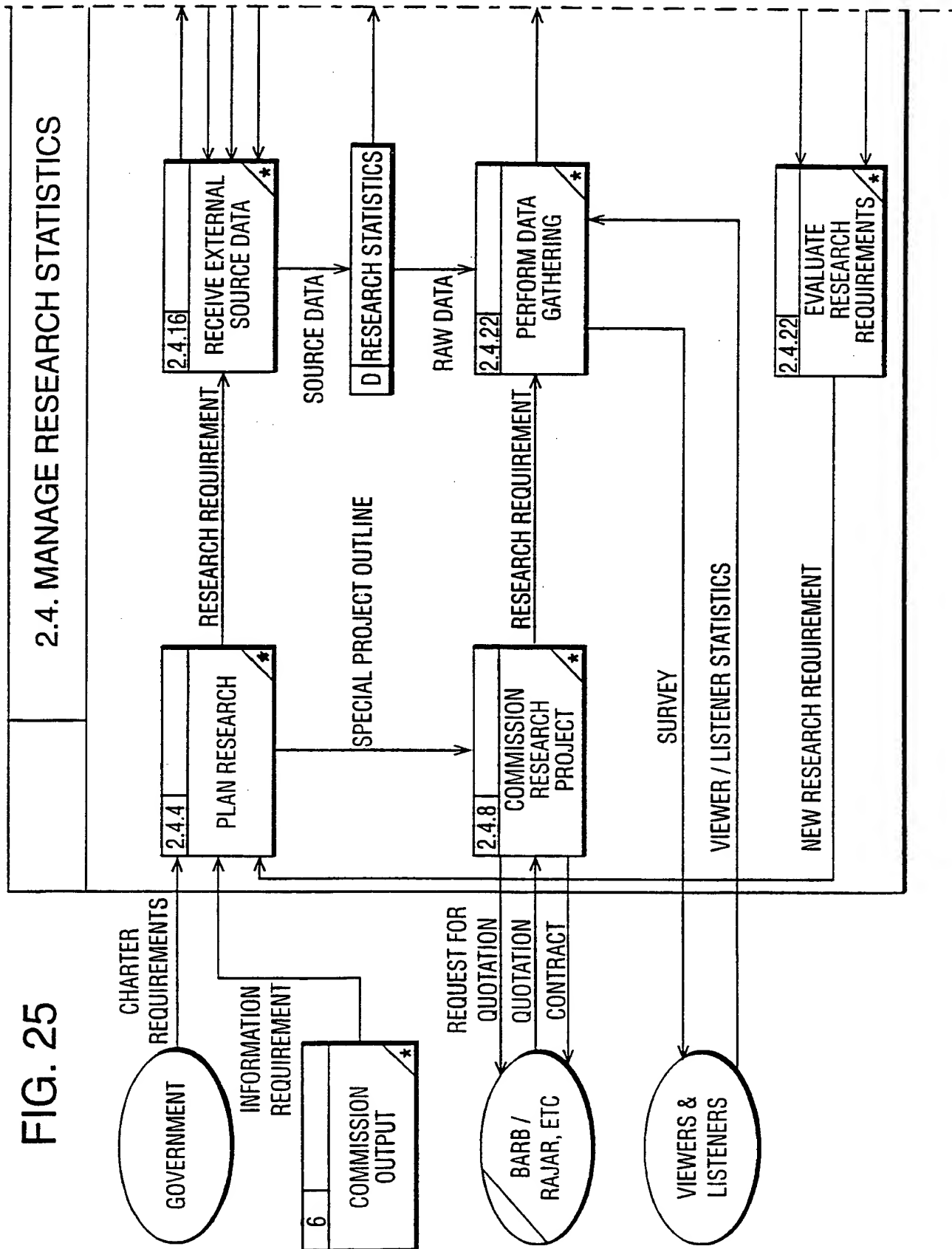


FIG. 24(IV)

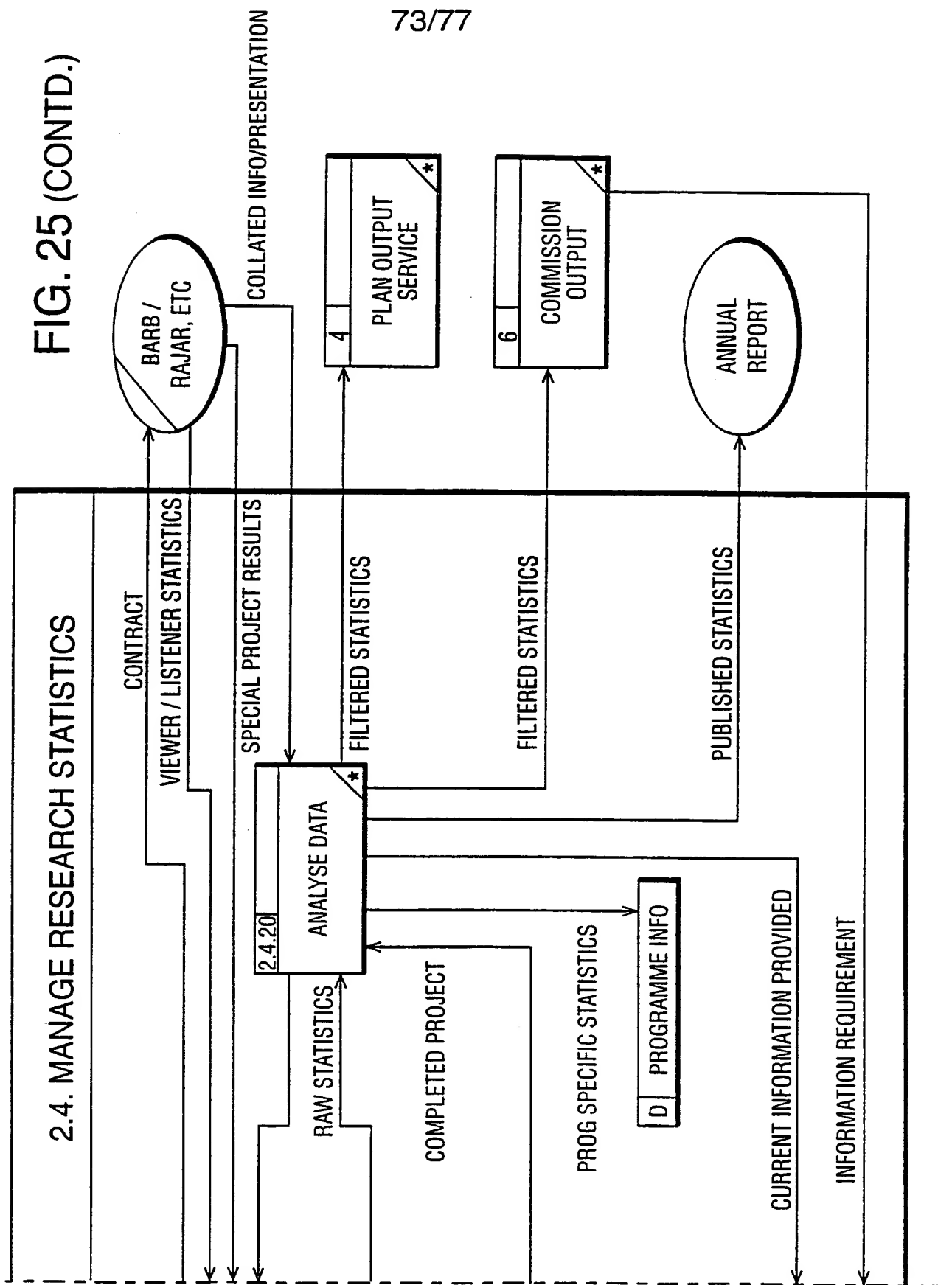
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FIG. 25



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FIG. 25 (CONTD.)



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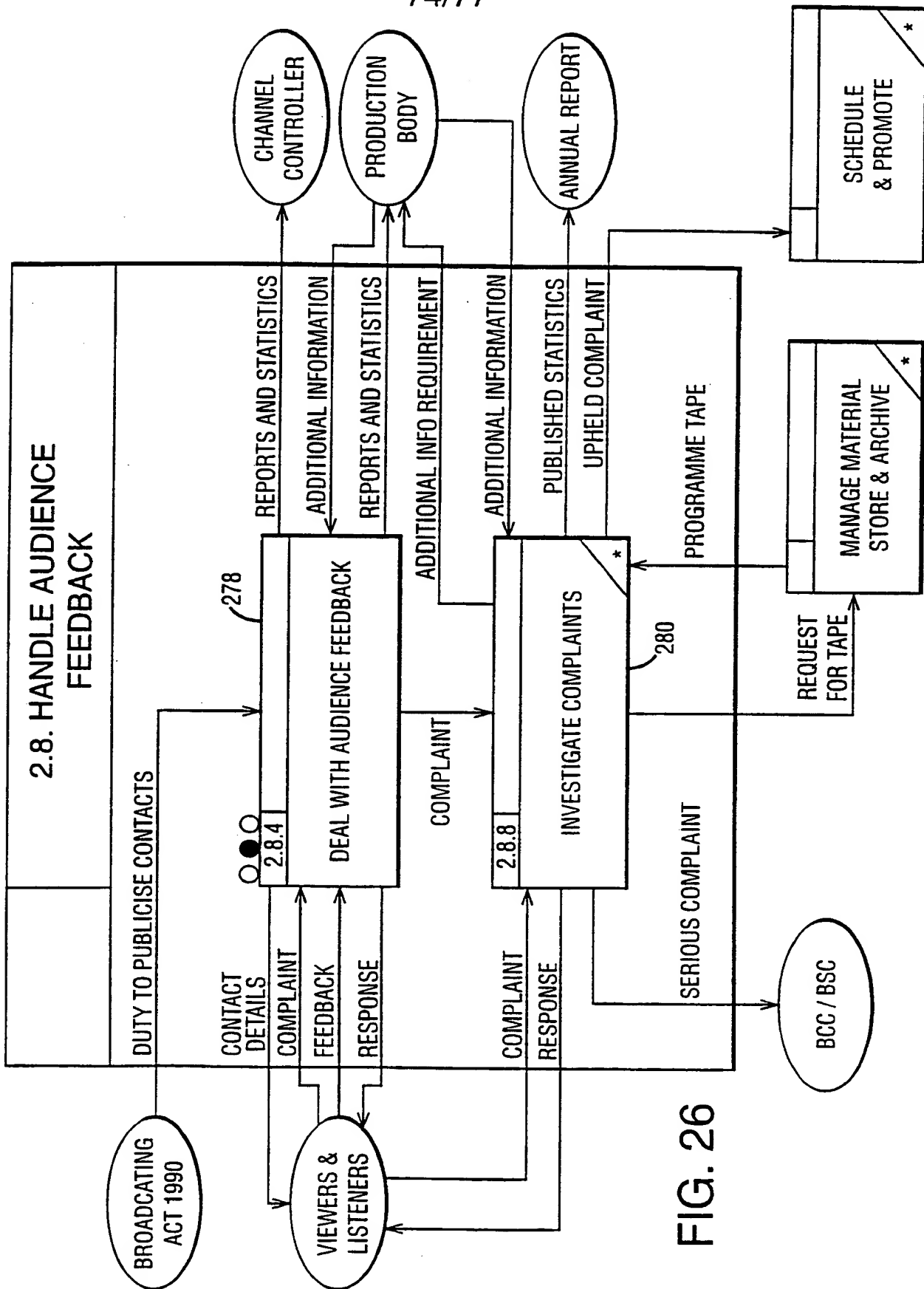
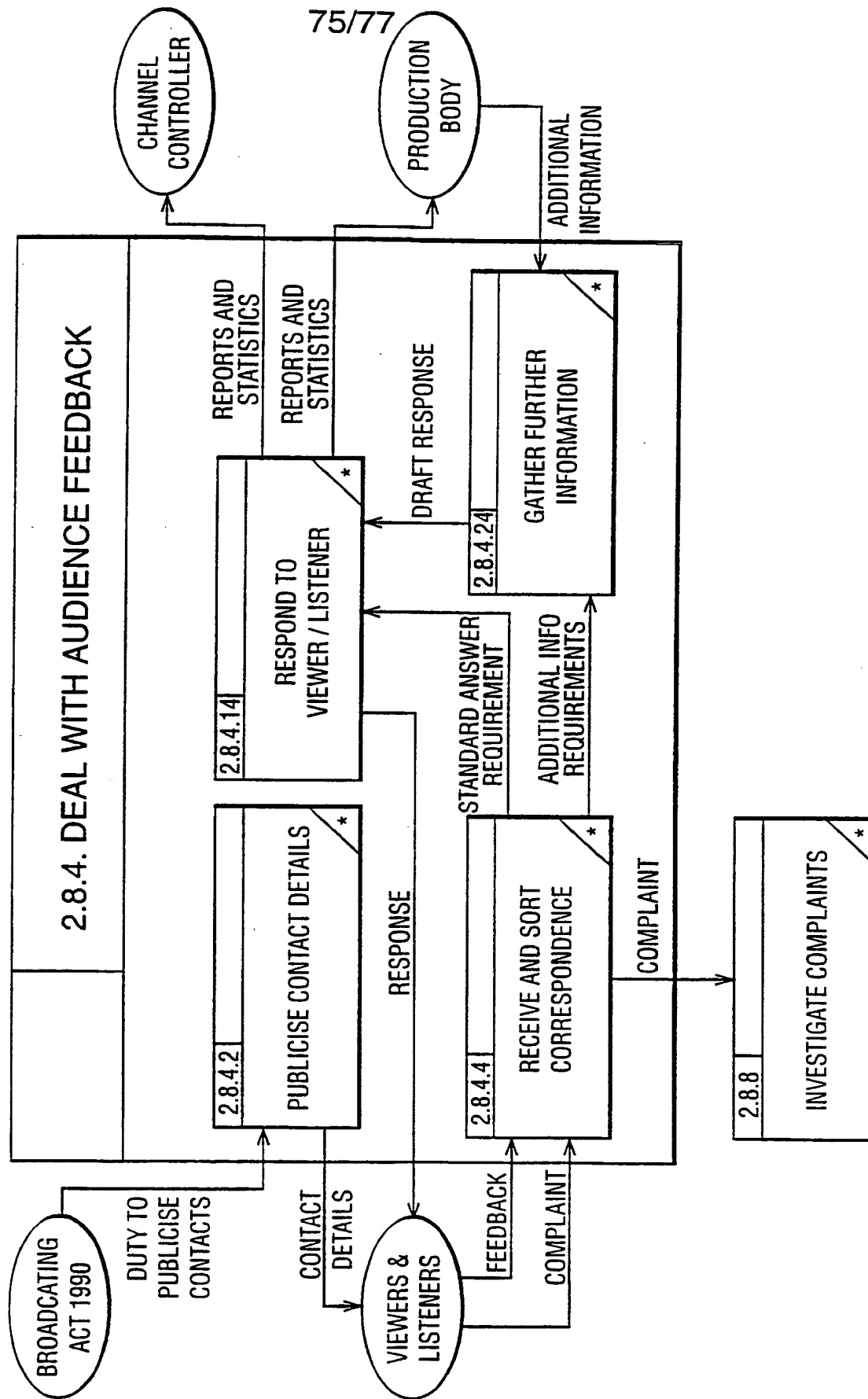


FIG. 26

FIG. 27



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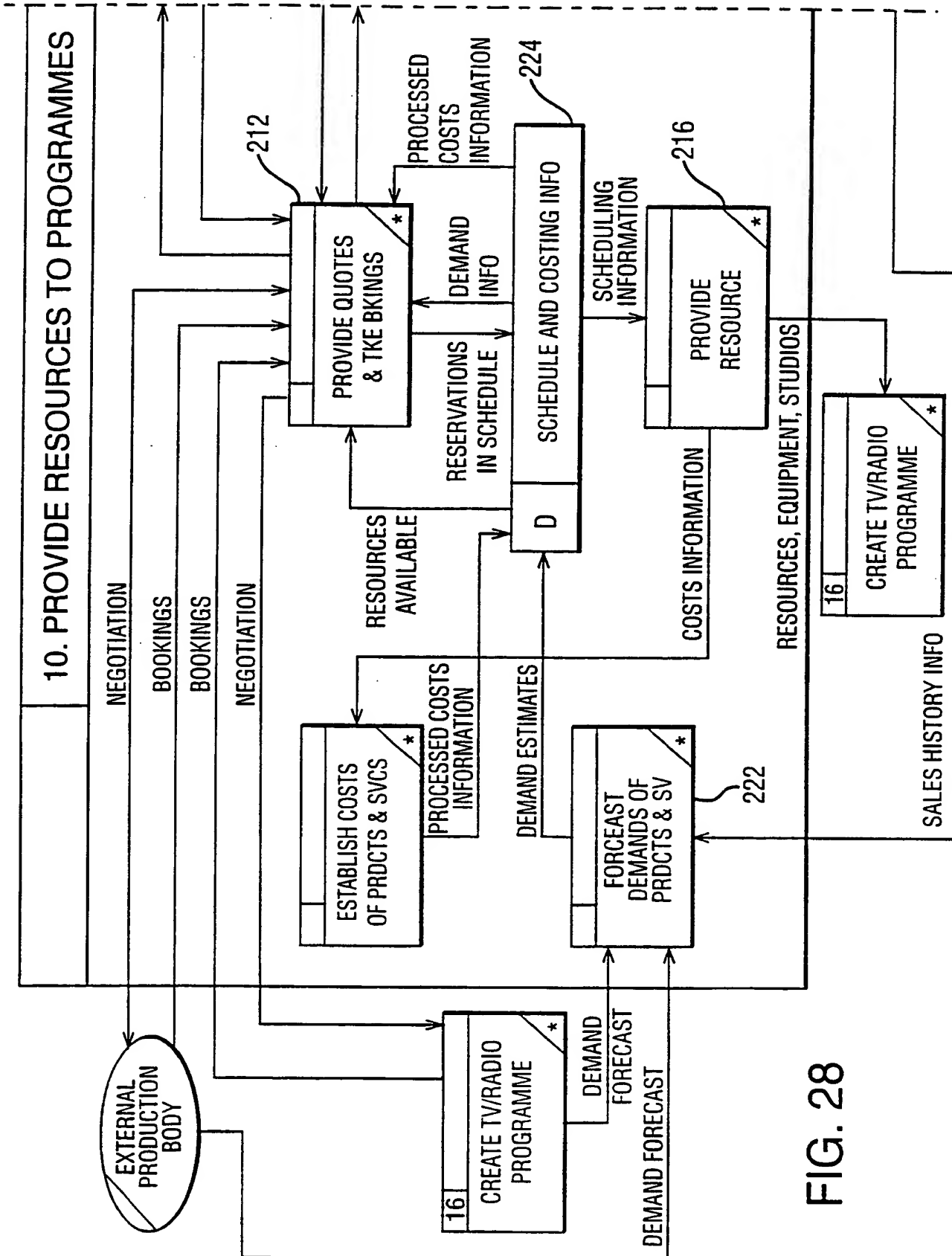


FIG. 28

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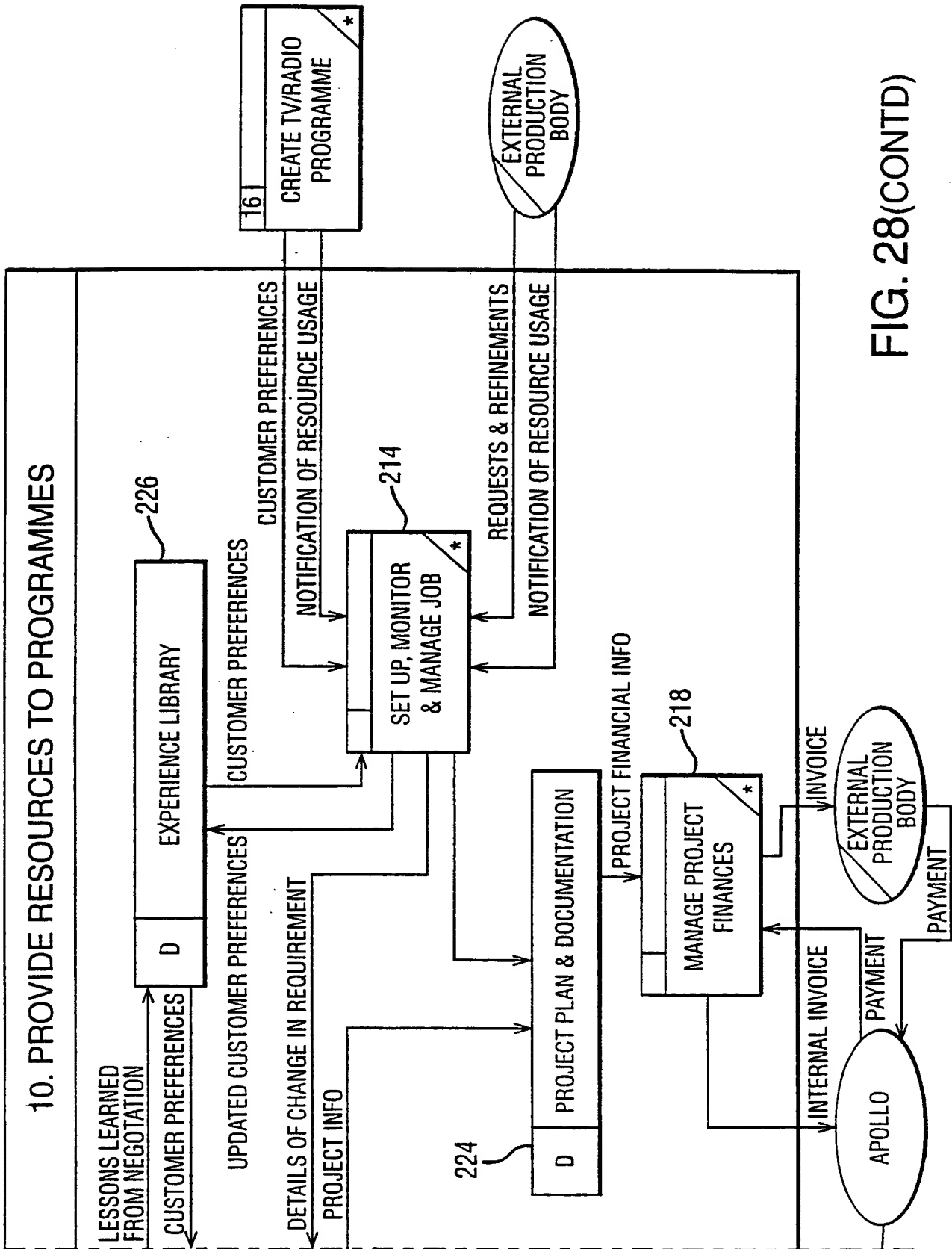


FIG. 28(CONTD)

INTERNATIONAL SEARCH REPORT

Inter national Application No

PCT/GB 99/03010

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06F17/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>"1ST REPORT OF EBU / SMPTE TASK FORCE FOR HARMONIZED STANDARDS FOR THE EXCHANGE OF TELEVISION PROGRAM MATERIAL AS BIT STREAMS"</p> <p>EBU REVIEW- TECHNICAL, BE, EUROPEAN BROADCASTING UNION. BRUSSELS, no. 272, 21 June 1997 (1997-06-21), page 1-73 XP000720137</p> <p>ISSN: 0251-0936</p> <p>page 14, line 1 -page 22, line 9</p> <p>page 38, line 8 -page 38, line 19</p> <p>page 48, line 1 -page 48, line 21</p> <p>page 57</p> <p style="text-align: center;">---</p> <p style="text-align: center;">-/--</p>	1-36

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☐ Patent family members are listed in annex.

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Date of the actual completion of the international search

13 January 2000

Date of mailing of the international search report

25/01/2000

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Fax: (+31-70) 340-3016

Authorized officer

Abbing, R

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 99/03010

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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A	<p>WILKIE, C.: "Multimedia Metadata - our 70 year experience"</p> <p>2ND IEEE METADATA CONFERENCE, 'Online! 16 - 17 September 1997, XP002127284</p> <p>Silver Spring, Maryland, USA</p> <p>Retrieved from the Internet:</p> <p><URL:http://computer.org/proceedings/meta97/papers/cwilkie/cwilkie.htm></p> <p>'retrieved on 2000-01-11!</p> <p>the whole document</p> <p>-----</p>	1-36

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